WOODSTOCK

SHOP FOX®

INTERNATIONAL

MODEL W1674
2 HP SHAPER

OWNER'S MANUAL

(FOR MODELS MANUFACTURED SINCE 9/10)

Phone: (360) 734-3482 • Online Technical Support: tech-support@shopfox.biz

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#11875TS Printed in Taiwan

Motor Brace Removal
Model W1674/W1702

A motor brace is factory installed on the Model W1674/W1702 to prevent damage to the motor during shipping. This motor brace must be removed before operation.

To remove the motor brace, do these steps:

1. Remove the three hex bolts, shown in **Figure 1**, and remove the motor brace from the shaper.

2. Install the three hex bolts back in their original position.

If you need any further help with this procedure, please contact us at 1-360-734-3482 or send e-mail to: tech-support@shopfox.biz.

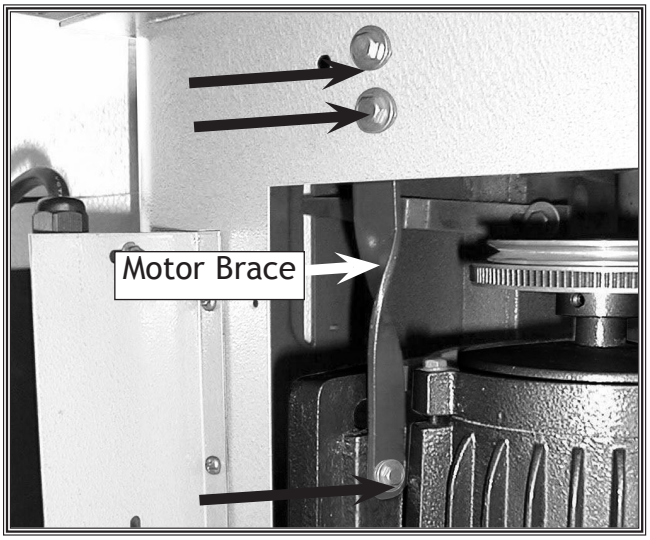

Figure 1. Motor brace and three hex bolts.

Model W1674
Manual Update
September, 2005

Since the manual was originally written, we have changed the way this shaper is packaged, which affects the assembly instructions.

Before operating your new machine, you MUST read and understand this manual update AND the original manual to prevent injuries from improper use or setup.

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#7552TR **Printed in Taiwan**

New Machine Inventory — Qty

Shaper Unit 1

Box 1:
- FWD/REV Switch.....1

Box 2:
- Fence Assembly.....1
- Fence Faces 1

Box 3:
- Handwheel.....1
- Miter Gauge 1
- Handle for Handwheel 1
- Spindle 1/2" 1
- Spindle 3/4" 1
- Spindle Nut 1/2" 2
- Spindle Nut 3/4" 2
- Spacer Set 8
- Draw Bar & Nut 1
- Spindle Wrench Set 2
- Safety Guard 1
- Safety Guard Shaft 1
- Starting Pin 3
- Hold Downs 4
- Hold Down Bars 2
- Hold Down Brackets 4
- Open-End Wrench 12/14mm.....1
- Spindle Washer 1/2" 2
- Spindle Washer 3/4" 2
- Hardware 1
  - —Set Screw 1/4"-20 x 3/8".....6
  - —Hex Nut 1/4"-20 2
  - —Flat Hd Screw 1/4"-20 x 5/8".....6
  - —Flat Washer 1/4".....4
  - —Cap Screw 1/4"-20 x 1/2" 4
- Guard Mounting Bar.....2
- Guard Holding Bracket 1
- Guard Support 1
- Shaft Holder.....1
- T-Nut 8
- Hex Wrench 3mm.....1
- Hold Down Mounting Block.....2

Figure 1. Shaper unit.

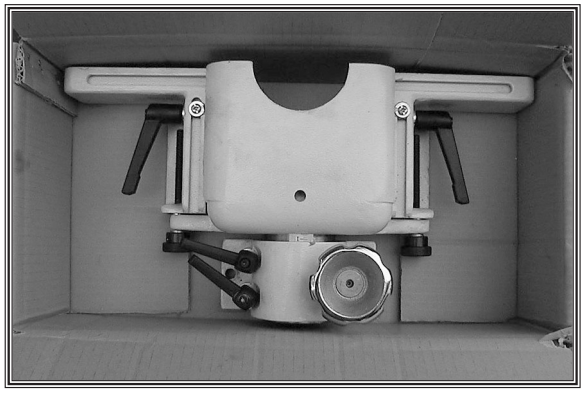


Figure 2. Box #2 contents.

Figure 3. Box #3 contents.

Attaching Switches

To install the switches, do these steps:

1. Remove the motor cover (see **Figure 6** for identification) from the cabinet by removing the six screws that hold it in place.
2. Remove the switches from inside the cabinet.
3. Install the grommet plate on to the motor cover as shown in **Figure 4**.
4. Re-install the motor cover on the cabinet.
5. Mount the FWD/REV switch to the cabinet as shown in **Figure 5**.

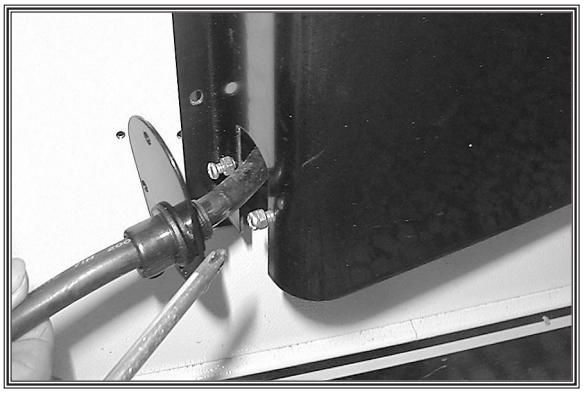


Figure 4. Installing grommet.

Figure 5. Mounting FWD/REV switch.

Handwheel & Handle

To install the handwheel and handle, do these steps:

1. Slide the handwheel over the shaft protruding from the front of the cabinet (see **Figure 6**).
2. Align the set screw in the handwheel with the flat part of the shaft, and tighten the set screw to keep the handwheel in place.
3. Thread the handle into the handwheel.

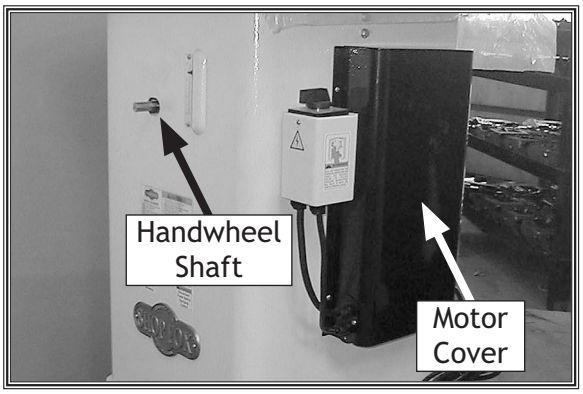


Figure 6. Handwheel and handle installed.

Motor Brace Removal

The Model W1674 is equipped with a motor brace to prevent damage to the motor during shipping. Remove the brace before using the shaper.

To remove the motor brace, do these steps:

1. Remove the three hex bolts shown in **Figure 7**, and remove the motor brace from the machine.
2. Install the three hex bolts in their original locations.

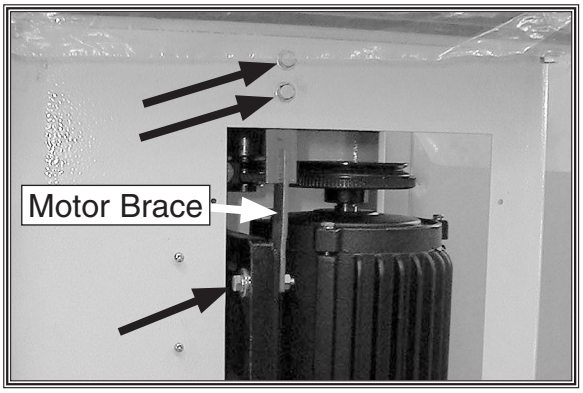


Figure 7. Motor brace and mounting bolts.

Fence Housing Assembly

To mount the fence housing assembly, do these steps:

1. Secure the adjustment bracket to the table with the three cap screws and washers that are already in the table (**Figure 8**).

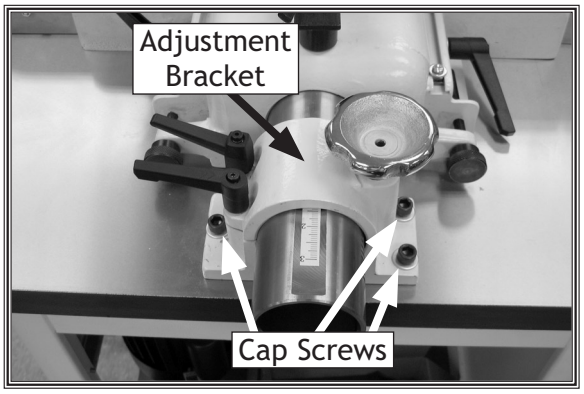


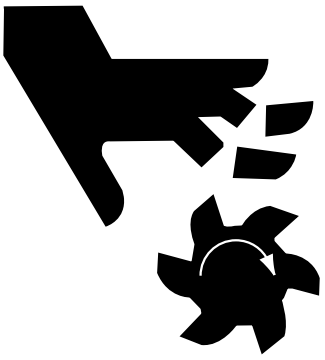
Figure 8. Fence housing assembly installed on table.

All Other Assembly

All other assembly MUST be performed as described in the W1674 Manual. If you have any questions that cannot be answered by reading this manual update or the full W1674 manual, please contact Shop Fox Technical Support at (360) 734-3482 or send email to: tech-support@shopfox.biz.

Guard Warning

⚠WARNING



To protect yourself, all guards MUST be installed on your shaper before operating it. Shapers are dangerous machines that can quickly cause serious injury if some kind of guard is not used. Read and follow the entire instruction manual carefully and do additional research on shop made guards and safety jigs.

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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USE THE QUICK GUIDE PAGE LABELS TO SEARCH OUT INFORMATION FAST!

INTRODUCTION

Woodstock Technical Support

This machine has been specially designed to provide many years of trouble-free service. Close attention to detail, ruggedly built parts and a rigid quality control program assure safe and reliable operation.

Woodstock International, Inc. is committed to customer satisfaction. Our intent with this manual is to include the basic information for safety, setup, operation, maintenance, and service of this product.

We stand behind our machines! In the event that questions arise about your machine, please contact Woodstock International Technical Support at (360) 734-3482 or send e-mail to: **tech-support@shopfox.biz**. Our knowledgeable staff will help you troubleshoot problems and process warranty claims.

If you need the latest edition of this manual, you can download it from **http://www.shopfox.biz**.
If you have comments about this manual, please contact us at:

Woodstock International, Inc.
Attn: Technical Documentation Manager
P.O. Box 2309
Bellingham, WA 98227
Email: manuals@woodstockint.com

Controls and Features

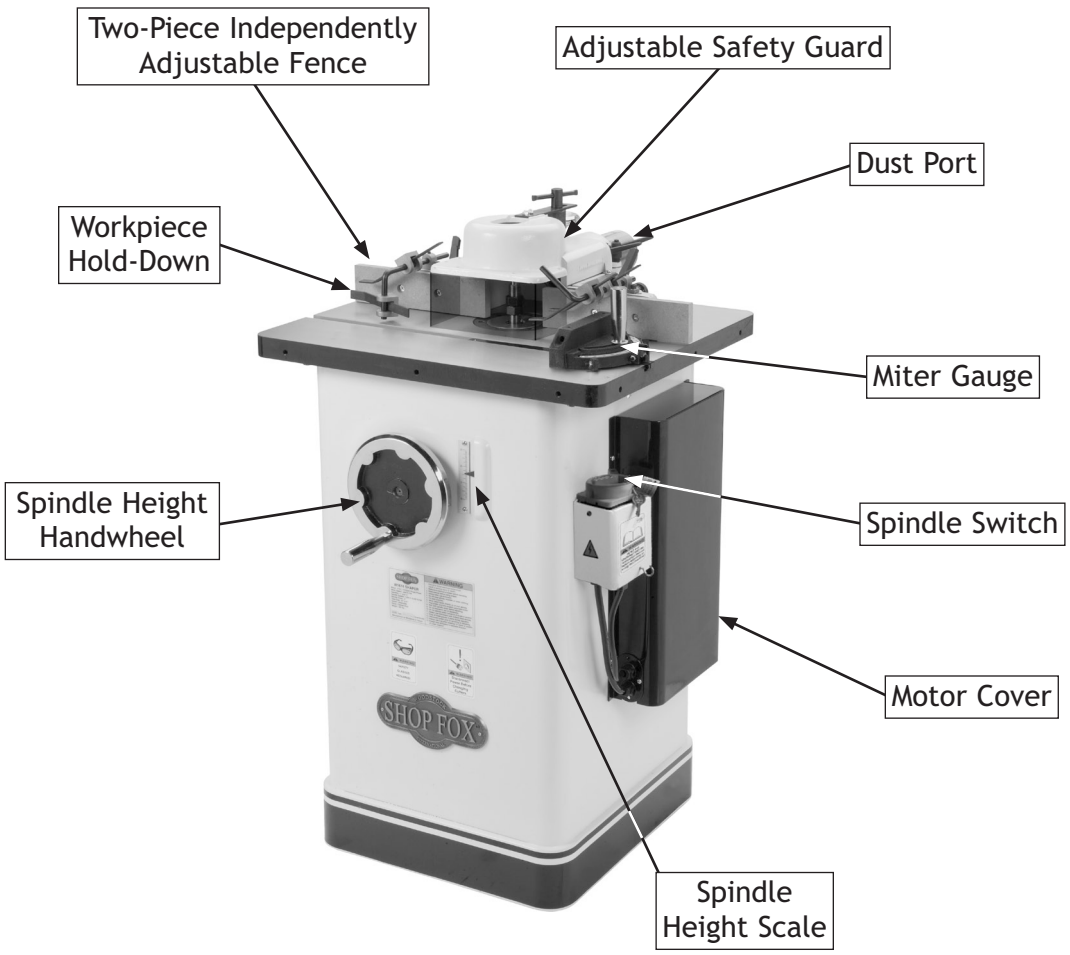


Figure 1. Model W1674 controls and features.

⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating Shaper

- **Wear eye protection.**
- **Be sure keyed washer is directly under spindle nut and spindle nut is tight.**
- **Feed workpiece against rotation of cutter.**
- **Do not use awkward hand positions.**
- **Keep fingers away from spinning cutter; use fixtures or jigs when necessary.**
- **Use overhead guard when adjustable fence is not in place.**

MACHINE SPECIFICATIONS

Phone #: (360) 734-3482 • Online Tech Support: tech-support@shopfox.biz • Web: www.shopfox.biz

MODEL W1674
2 HP SHAPER

Motor

Type	TEFC Capacitor Start Induction
Horsepower	2 HP
Voltage	110/220V
Prewired	220V
Phase	Single
Amps	18/9A
Speed	3450 RPM
Cycle	60 Hz
Number Of Speeds	1
Power Transfer	V-Belt Drive
Bearings	Sealed and Lubricated

Main Specifications

Spindle Specifications

1/2" Max Cutter Height	2"
3/4" Max Cutter Height	2 3/8"
Max Cutter Diameter	5"
Spindle Sizes	1/2" and 3/4"
1/2" Exposed Spindle Length	3 5/8"
3/4" Exposed Spindle Length	4 3/8"
Spindle Travel	3"
Spindle Speeds	7,000 and 10,000

Table Specifications

Table Counterbore Diameter	5"
Table Counterbore Depth	7/16"
Number of Table Inserts	2
Table Insert Size (ID)	3 1/2", 5"
Table Length	21"
Table Width	24"
Table Thickness	1 1/4"
Floor to Table Height	33 1/2"
Miter Gauge Slot Type	T-Slot
Miter Gauge Slot Width	3/4"
Miter Gauge Slot Height	13/32"

Overall Dimensions

Weight	250 lbs.
Length	24 7/8"
Width	24"
Height	41"
Foot Print (Length/Width)	18 1/4" x 19 1/8"

Construction Materials

Cabinet	Steel
Fence	Wood
Miter Gauge	Cast Iron and Steel
Table	Precision-Ground Cast Iron
Guard	Cast Iron
Paint	Powder Coated

Shipping Dimensions

Weight	270 lbs.
Length	24 1/2"
Width	27 1/2"
Height	43 1/4"

Electrical

Power Requirement	110V/220V, Single-Phase
Switch	Rotary Switch
Switch Voltage	220V
Cord Length	10 ft.
Cord Gauge	14 gauge
Recommended Breaker Size	20/15A
Plug	NEMA 6-15

Other

Number of Dust Ports	1
Dust Port Size	3"
Mobile Base	Built-In
Customer Assembly Time	Approximately 1 Hour
Warranty	2 Year
Country of Origin	Taiwan

Features

Reversing Spindle Switch
Large Precision-Ground Cast Iron Table
Heavy-Duty Miter Gauge

SAFETY

For Your Own Safety, Read Manual Before Operating Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures—this responsibility is ultimately up to the operator!

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the equipment, and/or a situation that may cause damage to the machinery.**

Standard Machinery Safety Instructions

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine. Untrained users can be seriously hurt.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are not approved safety glasses.

HAZARDOUS DUST. Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with workpiece materials, and always wear a NIOSH-approved respirator to reduce your risk.

WEARING PROPER APPAREL. Do not wear clothing, apparel, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips which could cause a loss of workpiece control.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

MENTAL ALERTNESS. Be mentally alert when running machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

DISCONNECTING POWER SUPPLY. Always disconnect machine from power supply before servicing, adjusting, or changing cutting tools (bits, blades, cutters, etc.). Make sure switch is in OFF position before reconnecting to avoid an unexpected or unintentional start.

DANGEROUS ENVIRONMENTS. Do not use machinery in wet or rainy locations, cluttered areas, around flammables, or in poorly-lit areas. Keep work area clean, dry, and well-lighted to minimize risk of injury.

APPROVED OPERATION. Untrained operators can be seriously hurt by machinery. Only allow trained or properly supervised people to use machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make workshop kid proof!

ONLY USE AS INTENDED. Only use machine for its intended purpose. Never modify or alter machine for a purpose not intended by the manufacturer or serious injury may result!

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

CHILDREN & BYSTANDERS. Keep children and bystanders a safe distance away from work area. Stop using machine if children or bystanders become a distraction.

REMOVE ADJUSTING TOOLS. Never leave adjustment tools, chuck keys, wrenches, etc. in or on machine—especially near moving parts. Verify removal before starting!

SECURING WORKPIECE. When required, use clamps or vises to secure workpiece. A secured workpiece protects hands and frees both of them to operate the machine.

FEED DIRECTION. Unless otherwise noted, feed work against the rotation of blades or cutters. Feeding in the same direction of rotation may pull your hand into the cut.

GUARDS & COVERS. Guards and covers can protect you from accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly before using machine.

NEVER STAND ON MACHINE. Serious injury or accidental contact with cutting tool may occur if machine is tipped. Machine may be damaged.

STABLE MACHINE. Unexpected movement during operations greatly increases the risk of injury and loss of control. Verify machines are stable/secure and mobile bases (if used) are locked before starting.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

UNATTENDED OPERATION. Never leave machine running while unattended. Turn machine off and ensure all moving parts completely stop before walking away.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. An improperly maintained machine may increase the risk of serious injury.

CHECK DAMAGED PARTS. Regularly inspect machine for damaged parts, loose bolts, mis-adjusted or mis-aligned parts, binding, or any other conditions that may affect safe operation. Always repair or replace damaged or mis-adjusted parts before operating machine.

EXPERIENCING DIFFICULTIES. If at any time you are experiencing difficulties performing the intended operation, stop using the machine! Contact our Technical Support for help at (360) 734-3482.

Additional Safety for Shapers

⚠WARNING

READ and understand this entire manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

⚠CAUTION

USE this and other machinery with caution and respect. Always consider safety first, as it applies to your individual working conditions. No list of safety guidelines can be complete—every shop environment is different. Failure to follow guidelines could result in serious personal injury, damage to equipment or poor work results.

GUARDING FROM CUTTER EXPOSURE: When setting up cuts, take every possible step to reduce operator exposure to the cutter. These steps include but are not limited to: Keeping the unused portion of the cutter below the table, using the smallest table insert allowed by cutter, adjusting fences as close as practical to the cutter on both sides, and securing the guard as close to the workpiece as possible. *Keep the provided guard, front guard, or other protective devices between your hands and the cutter at all times!*

KEEPING HANDS SAFE: Never pass your hands near or directly over or in front of the cutter. As one hand approaches the 6-inch radius point, move it in an arc motion away from the cutter to the outfeed side and reposition that hand more than 6 inches beyond the cutter.

SMALL WORKPIECES: DO NOT shape small workpieces without special fixtures or jigs. Where practical, shape longer stock and cut to size.

CUTTER POSITIONING: Keep the cutters on the underside of the workpiece whenever possible to reduce operator exposure to the moving cutter.

TESTING FOR CLEARANCE: Unplug the shaper, and always rotate the spindle by hand to test any new setup for proper cutter clearance before starting the shaper.

SAFELY STARTING AND FEEDING WORKPIECE: When shaping contoured work and using a rub collar, NEVER start shaping at a corner. See the rub collar section in the manual. The danger of kickback is increased when the stock has knots, holes, or foreign objects in it.

PREPARING A WORKPIECE: Always "square up" a workpiece before you run it through the shaper. A warped workpiece is difficult to process and increases the risk of an accident.

AVOIDING AN OVERLOAD: Never attempt to remove too much material in one pass. Several light passes are safer and give a cleaner finish.

SAFELY FEEDING A WORKPIECE: We recommend using some type of fixture, jig, or hold-down device to safely support the workpiece when feeding. **ALWAYS** use a push stick when shaping small or narrow workpieces. Use an outfeed support table if shaping long workpieces to make sure that they remain supported during the entire cutting procedure.

AVOIDING CUTTER AND WORKPIECE GRAB: Always make sure cutter is positioned in the correct direction before starting shaper, and always feed against the rotation of the cutter.

SAFE CUTTER INSTALLATION: Never operate the shaper without verifying that the spindle nut is tight. A tight spindle nut reduces the risk of the cutter or rub collars flying off during operation.

ELECTRICAL

Circuit Requirements

This machine must be connected to the correct size and type of power supply circuit, or fire or electrical damage may occur. Read through this section to determine if an adequate power supply circuit is available for this machine. If a correct circuit is not available, you must have a qualified electrician install one before you can operate the machine.

A power supply circuit includes all electrical equipment between the main breaker box or fuse panel in your building and the incoming power connections at the machine. The power supply circuit used for this machine must be sized to safely handle the full-load current drawn from the machine for an extended period of time.

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating at 220V.....9 Amps
Full-Load Current Rating at 110V ..... 18 Amps

Circuit Requirements for 220V (Prewired)

This machine is prewired to operate on a 220V power supply circuit that has a verified ground and meets the following requirements:

Circuit Type .....220V/240V, 60 Hz, Single-Phase
Circuit Size ..... 15 Amps
Plug/Receptacle ..... NEMA 6-15

Circuit Requirements for 110V

This machine can be converted to operate on a 110V power supply. To do this, the motor will need to be rewired and a new plug installed on the power cord; refer to the **Wiring Diagram** on **Page 49** for details. The intended 110V circuit must have a verified ground and meet the requirements that follow:

Circuit Type ..... 110V/120V, 60 Hz, Single-Phase
Circuit Size ..... 20 Amps
Plug/Receptacle ..... NEMA 5-20

⚠WARNING

The machine must be properly set up before it is safe to operate. DO NOT connect this machine to the power source until instructed to do so in the "Test Run" portion of this manual.

⚠WARNING

DO NOT work on your electrical system if you are unsure about electrical codes and wiring! Seek assistance from a qualified electrician. Ignoring this warning can cause electrocution, fire, or machine damage.

⚠CAUTION

For your own safety and protection of property, consult a qualified electrician if you are unsure about wiring practices or electrical codes in your area.

NOTICE

The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.

Grounding Requirements

In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current to travel— in order to reduce the risk of electric shock.

Improper connection of the equipment-grounding wire will increase the risk of electric shock. The wire with green insulation (with/without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

For 220V Connection (Prewired)

This machine is equipped with a power cord that has an equipment-grounding wire and NEMA 6-15 grounding plug. The plug must only be inserted into a matching receptacle (see **Figure 2**) that is properly installed and grounded in accordance with local codes and ordinances.

For 110V Connection (Must be Rewired)

A NEMA 5-20 plug has a grounding prong that must be attached to the equipment-grounding wire inside the included power cord. The plug must only be inserted into a matching receptacle (see **Figure 3**) that is properly installed and grounded in accordance with all local codes and ordinances.

Extension Cords

We do not recommend using an extension cord with this machine. Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases with longer extension cords and the gauge smaller gauge sizes (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle, and meet the following requirements:

Minimum Gauge Size for 220V..... 14 AWG
Minimum Gauge Size for 110V..... 12 AWG
Maximum Length (Shorter is Better).....50 ft.

⚠WARNING

The machine must be properly set up before it is safe to operate. DO NOT connect to the power source until instructed to do so later this manual.

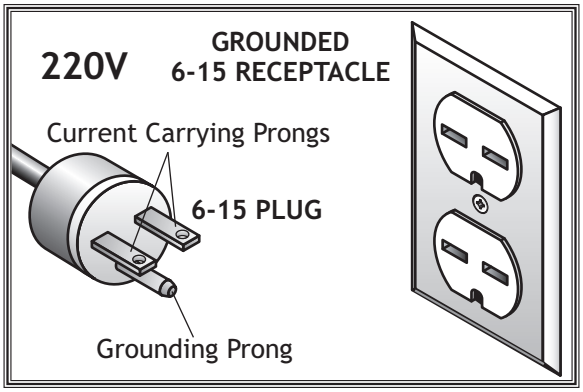


Figure 2. NEMA 6-15 plug & receptacle.

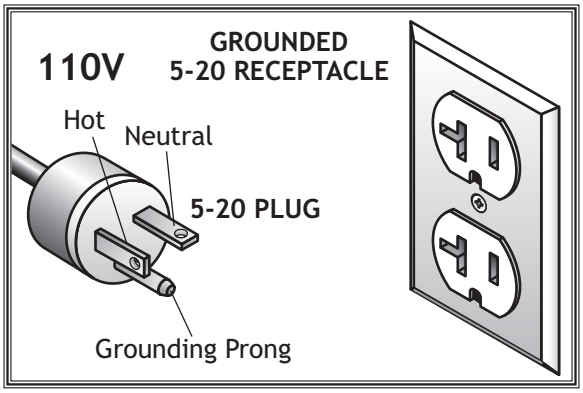


Figure 3. NEMA 5-20 plug & receptacle.

⚠CAUTION

DO NOT modify the provided plug or use an adapter if the plug will not fit your receptacle. If the machine must be reconnected for use on a different type of electric circuit, the reconnection should be made by qualified service personnel; and after reconnection, the machine must comply with all local codes and ordinances.

SETUP

Unpacking

This machine has been carefully packaged for safe transportation. If you notice the machine has been damaged during shipping, please contact your authorized Shop Fox dealer immediately.

Inventory

The following is a description of the main components shipped with the Model W1674. Lay the components out to inventory them.

Note: *If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for safer shipping.*

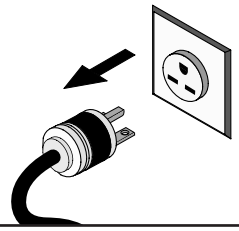
Box 1 Inventory (Not Shown) **Qty**

A. Shaper Unit.....1
B. Spindle Switch w/Padlock & Keys (inside cabinet) ..1

Box 2 Inventory (Figure 4) **Qty**

C. Fence Assembly.....1
D. Fence Boards.....2
E. Hardware Bag:
- —Flat Hd Screws 1/4"-20 x 3/4" (Fence Boards).....4
- —Flat Washers 1/4" (Hold-Down Brackets).....4
- —Set Screws 1/4"-20 x 3/8" (Hold-Downs).....2
- —Cap Screws 1/4"-20 x 1/2" (Hold-Down Brackets)....4
- —T-Nuts 1/4"-20 (Fence Boards & Hold-Downs) 8
- —Hold-Down Bar Brackets 2
- —Hex Wrench 3mm 1

⚠WARNING



Keep machine disconnected from power until instructed otherwise.

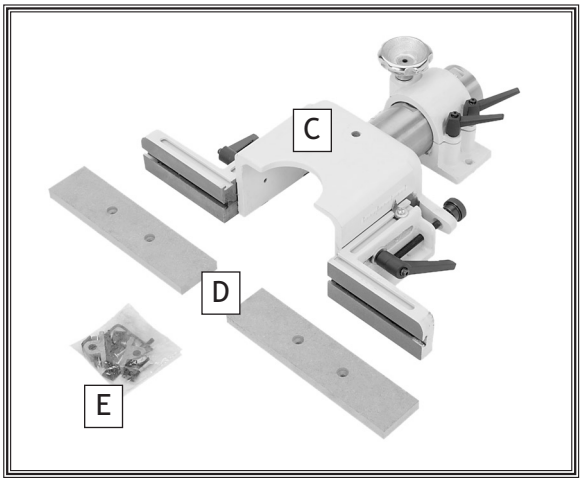


Figure 4. Model W1674 inventory—box 2.

Box 3 Inventory (Figure 5)

F. Guard Support..... 1
G. Guard Holding Bracket..... 1
H. T-Lock Handle (Safety Guard) 1
I. Guard Mounting Bars, Long & Short .... 1 Each
J. Safety Guard 1
K. Hardware Bag:
—Set Screws 1/4"-20 x 3/8" (Hold-Downs)..... 4
—Hex Nuts 1/4"-20 (Safety Guard) 2
—Flat Hd Screws 1/4"-20 x 3/4" (Safety Grd).. 2
—Hex Wrench 5mm 1
—Knob Bolt 1/4"-20 x 1/2"..... 2
—Flat Washer 1/4"..... 4
—Open-End Wrench 12/14mm..... 1
L. Spindle Spacers:
—1/2" x 1" x 1/4"..... 1
—1/2" x 1" x 3/8"..... 1
—1/2" x 1" x 1/2"..... 1
—1/2" x 1" x 3/4"..... 1
—3/4" x 1 1/4" x 1/4" 1
—3/4" x 1 1/4" x 3/8" 1
—3/4" x 1 1/4" x 1/2" 1
—3/4" x 1 1/4" x 3/4" 1

M. Spindle Washers:
—Spindle Washers 1/2" 2
—Spindle Washers 3/4" 2
N. Starting Pins 3
O. Drawbar & Drawbar Nut..... 1 Each
P. Spindle & Spindle Nut 3/4"..... 1 Each
Q. Spindle & Spindle Nut 1/2"..... 1 Each
R. Safety Guard Shaft 1
S. Safety Guard Shaft Holder 1
T. Handwheel..... 1
U. Handwheel Handle 1
V. Hold-Down Bars 2
W. Hold-Down Brackets..... 4
X. Hold-Downs 4
Y. Miter Gauge Assembly 1
Z. Spindle Wrench Set..... 1
AA. Front Guard 1
BB. Top Safety Plate 1

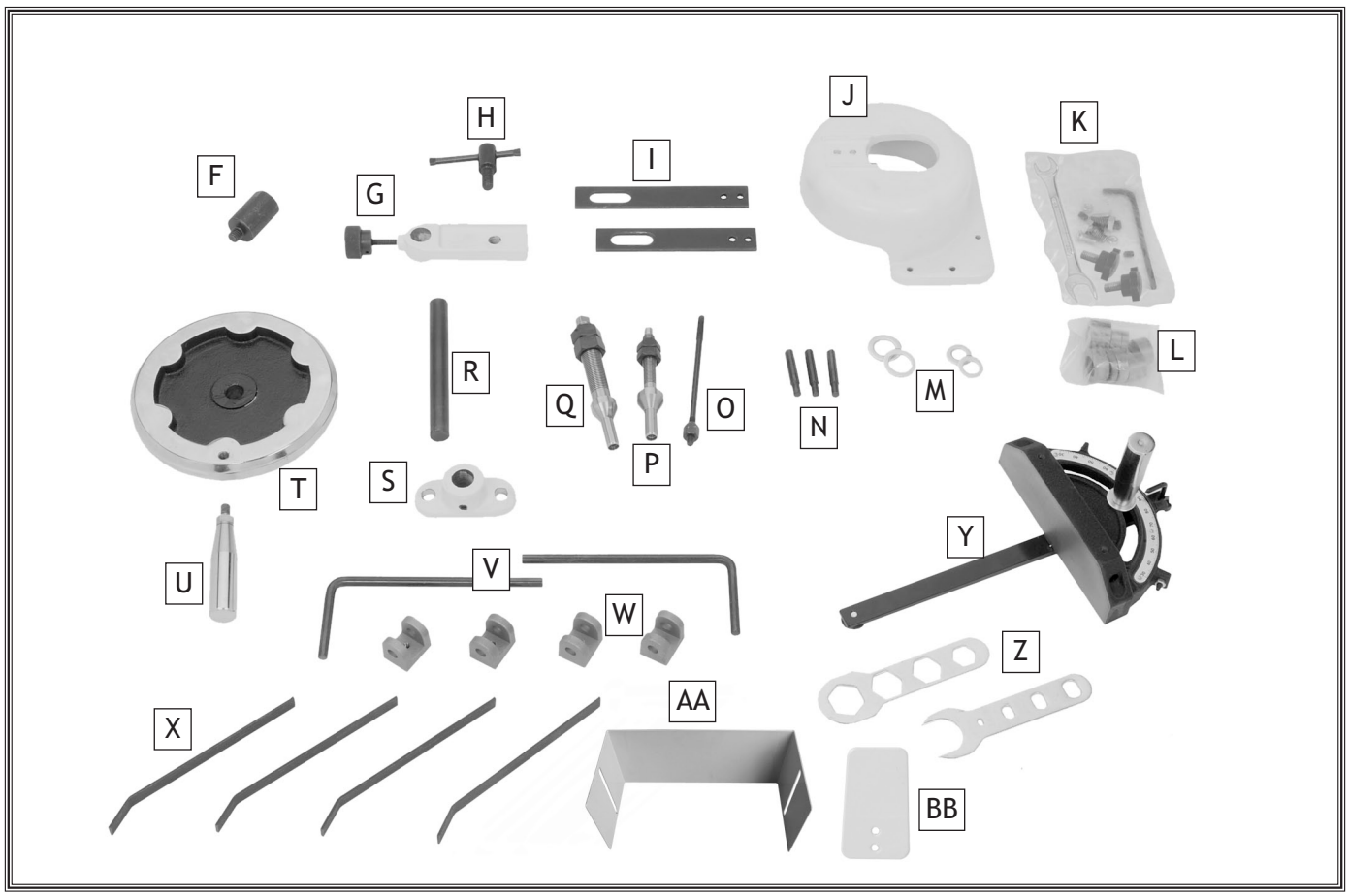


Figure 5. Model W1674 inventory—box 3.

Machine Placement

- **Floor Load:** This machine distributes a heavy load in a small footprint. Some residential floors may require additional bracing to support both machine and operator.

- **Working Clearances:** Consider existing and anticipated needs, size of material to be processed through the machine, and space for auxiliary stands, work tables or other machinery when establishing a location for your planer/moulder.

- **Lighting:** Lighting should be bright enough to eliminate shadow and prevent eye strain.

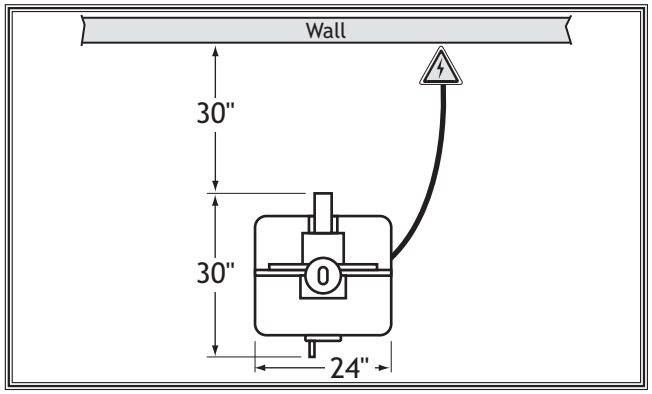
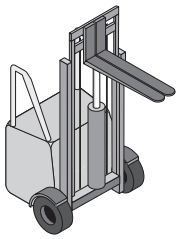


Figure 6. Minimum working clearances.



⚠WARNING

USE helpers or power lifting equipment to lift this jointer. Otherwise, serious personal injury may occur.

⚠CAUTION

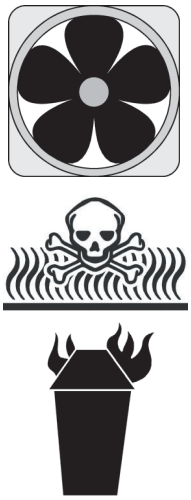
MAKE your shop "child safe." Ensure that your workplace is inaccessible to children by closing and locking all entrances when you are away. NEVER allow untrained visitors in your shop when assembling, adjusting or operating equipment.

Cleaning Machine

The table and other unpainted parts of your shaper are coated with a waxy grease that protects them from corrosion during shipment. Clean this grease off with a solvent cleaner or citrus-based degreaser. DO NOT use chlorine-based solvents such as brake parts cleaner or acetone—if you happen to splash some onto a painted surface, you will ruin the finish.

⚠WARNING

NEVER clean with gasoline or other petroleum-based solvents. Most have low flash points, which make them extremely flammable. A risk of explosion and burning exists if these products are used. Serious personal injury may occur if this warning is ignored!



⚠CAUTION

ALWAYS work in well-ventilated areas far from possible ignition sources when using solvents to clean machinery. Many solvents are toxic when inhaled or ingested. Use care when disposing of waste rags and towels to be sure they DO NOT create fire or environmental hazards.

SETUP

Assembly

⚠WARNING

This machine and its components are very heavy. Use safe lifting and methods, and get lifting help or use power lifting equipment such as a forklift to move the heavy items.

Tools Needed	Qty
Wrench 12mm	1
Hex Wrench 5mm	1
Phillips Screwdriver #2	1
Hex Wrench 5mm, 8mm	1 Each

Mounting Shaper

For permanent stability, your shaper can be mounted to the floor with hardware similar to that shown in **Figure 7**. The shaper unit has two mounting holes that are accessed from inside the shaper cabinet.

Alternately, your shaper can be mounted on the Model D2057A Shop Fox Adjustable Mobile Base, as shown in **Figure 8**. This method offers mobility and stability.

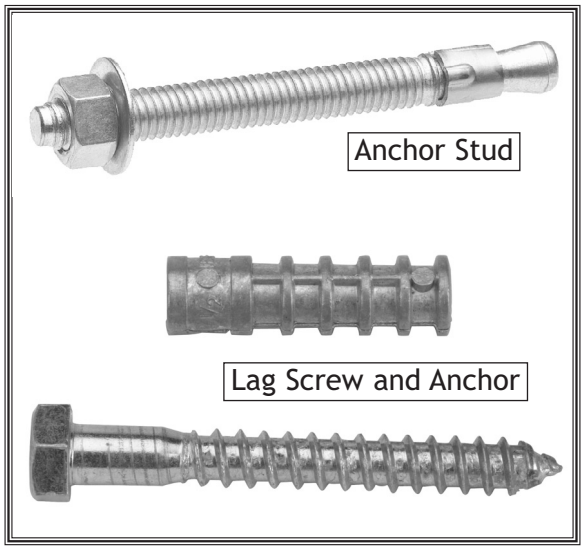


Figure 7. Typical fasteners for mounting to concrete floors.

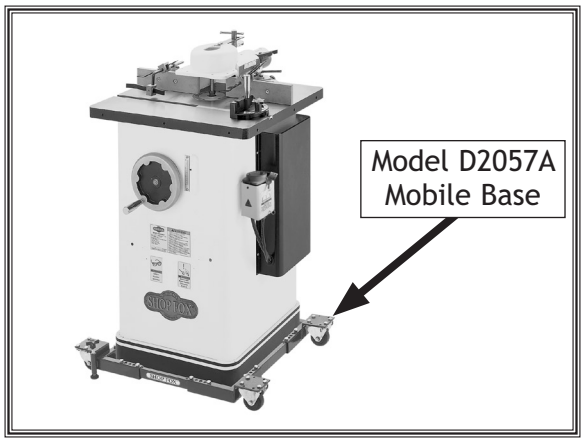


Figure 8. Model W1674 Shaper mounted on the Model D2057A Mobile Base.

Motor Shipping Braces

To protect the motor and cabinet during shipping, two red motor braces were installed with six hex bolts, as shown in **Figure 9**.

Remove the motor cover from the side of the shaper, then use a 12mm wrench to remove these hex bolts and braces before proceeding with the assembly.

Note: *If the need arises to ship or transport your shaper, re-install these braces and hex bolts to protect the motor, elevation assembly, and cabinet.*

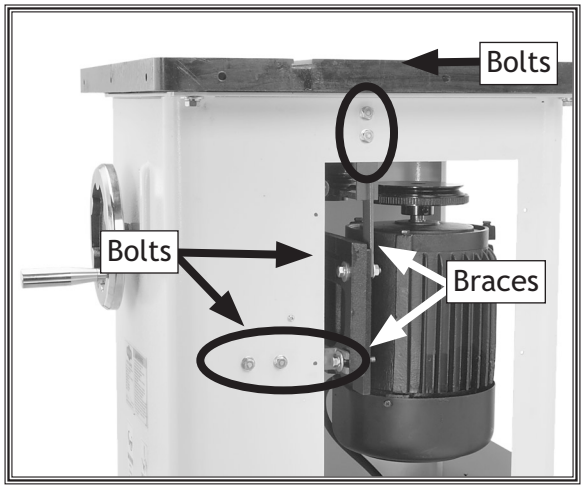


Figure 9. Motor shipping braces and hex bolts.

Spindle Height Handwheel

1. Thread the handle into the hole provided on the handwheel, then fully tighten it (see **Figure 10**).

2. Align the set screw in the handwheel hub with the shaft flat, then slide the handwheel onto the shaft and tighten the set screw.

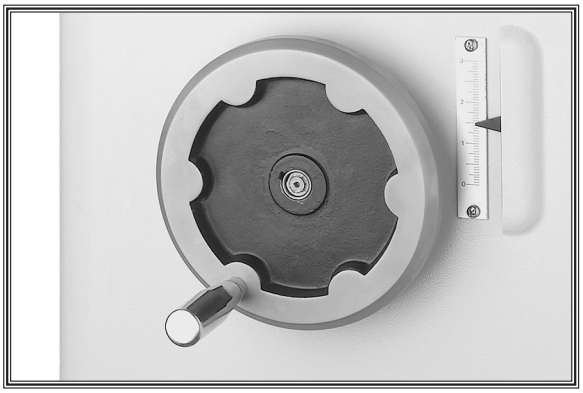


Figure 10. Spindle height handwheel installed.

Spindle Switch

1. Remove the motor cover.

2. Use the handwheel to raise the spindle and motor to its highest position.

3. Reach inside the cabinet and pull the spindle switch out from underneath the motor.

4. Use the two pre-installed screws to mount the spindle switch, as shown in **Figure 11**.

5. Re-install the motor cover.

6. Attach the spindle switch cord grommet to the motor cover, as shown in **Figure 12**.

Figure 11. Spindle switch installed.

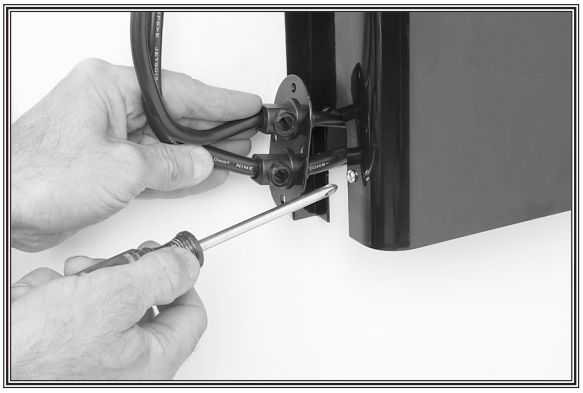


Figure 12. Installing switch cord grommet.

Fence Assembly

The fence assembly supports the fence boards and the safety guard. The position of the fence assembly, the fence boards, and the safety guard are all independently adjustable.

Note: *Refer to the **Fence Adjustment** subsection on **Page 24** for detailed operating instructions.*

To install the fence assembly, do these steps:

1. Remove the two hex bolts, three cap screws, lock washers, and flat washers from the back of the table top (see **Figure 13**).

   Note: *The two hex bolts and lock washers are used when installing the safety guard without the fence assembly.*

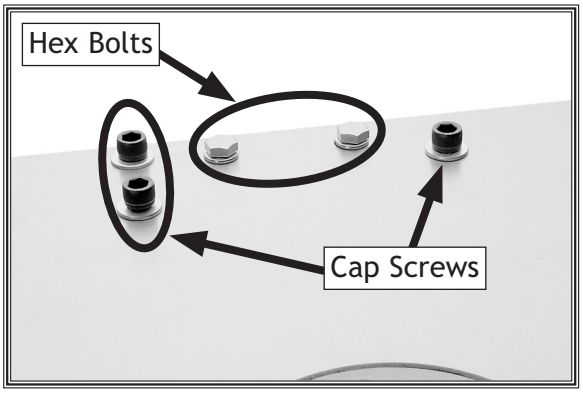


Figure 13. Fence and safety guard mounting fasteners.

2. Turn the fence assembly upside down to expose the fence ram inside the housing, as shown in **Figure 14**.

3. Remove the cap screw from the end of the fence ram, slide the ram out until the mounting hole in the fence assembly and the ram are aligned, then install the cap screw in the location shown in **Figure 14**.

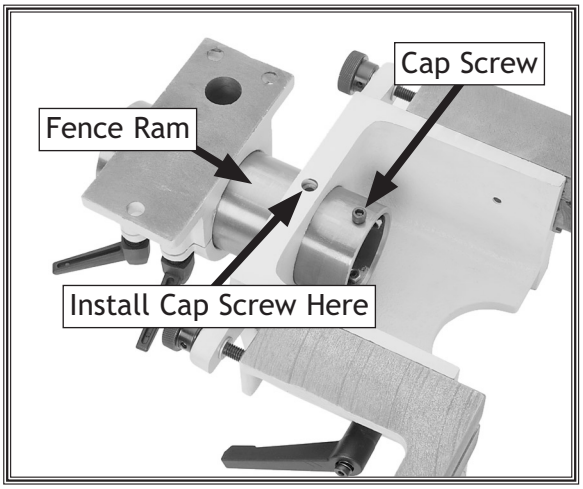


Figure 14. Fence ram and cap screw.

4. Make sure the mounting surface of the fence assembly and the table top are thoroughly clean, then position the assembly on the table, as shown in **Figure 15**.

5. Align the fence base with the edge of the table, then secure the assembly with the three cap screws and flat washers removed in **Step 1**.

6. Insert the four 1/4"-20 x 3/4" flat head screws through the front of the fence boards, then thread four 1/4"-20 T-nuts onto the screws one or two turns.

Note: *The raised boss of the T-nuts face the fence board.*

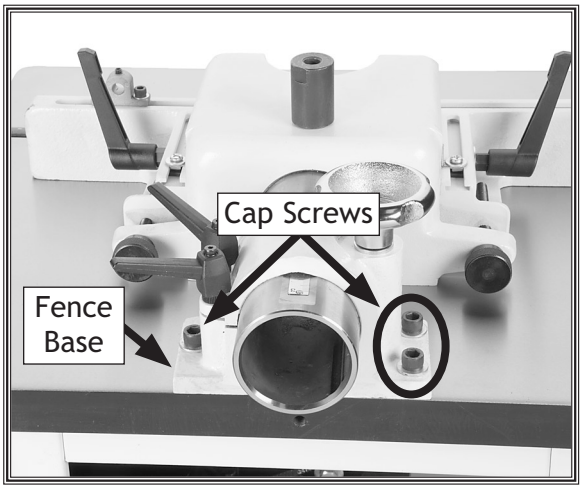


Figure 15. Fence assembly installed.

7. Slide the fence board assemblies into the front slots of the fence mounts, then tighten the screws to hold them in place, as shown in **Figure 16**.

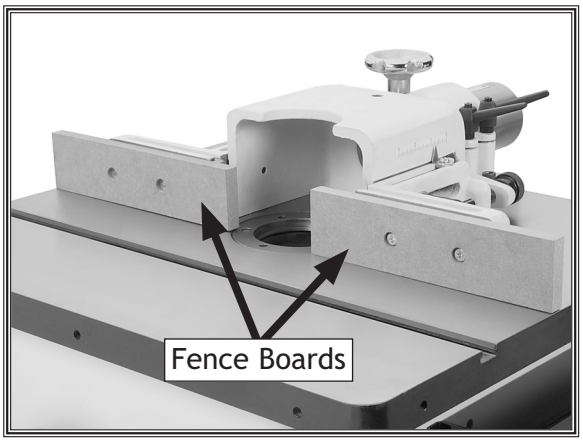


Figure 16. Fence boards installed.

Safety Guard

The safety guard protects the operator from the spinning cutter. It adjusts with the T-lock handle.

Note: *Refer to the **Safety Guard** subsection on **Page 31** for detailed operating instructions.*

To install the safety guard, do these steps:

1. Thread and hand-tighten the guard support into the threaded hole on top of the fence assembly (see **Figure 17**).

2. From underneath the safety guard, insert two 1/4"-20 x 3/4" flat head screws into the holes that are in the center of the guard, then secure the shorter guard mounting bar with two 1/4"-20 hex nuts, as shown in **Figure 17**.

3. Attach the safety guard assembly to the guard support with the T-lock handle.

4. Attach the front guard to safety guard with the two knob bolts (the knob bolts thread into the sides of the safety guard; see **Figure 46** for additional clarity if needed).

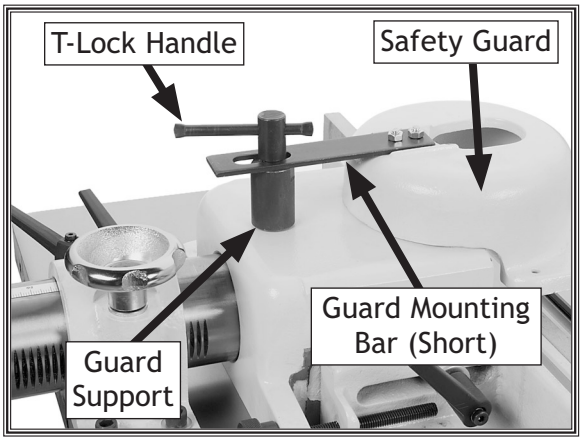


Figure 17. Safety guard components.

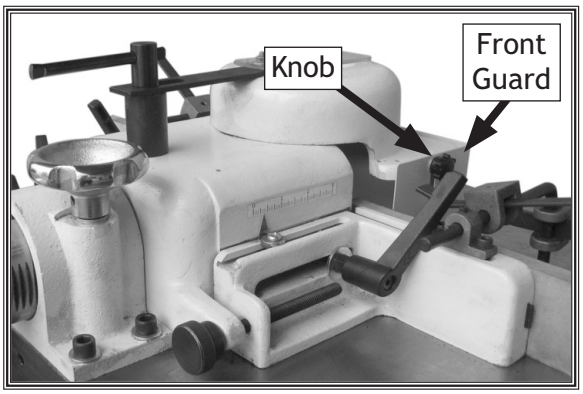


Figure 18. Front guard installed.

Dust Collection

Recommended CFM at Dust Port: ..... 400 CFM

Do not confuse this CFM recommendation with the rating of the dust collector. To determine the CFM at the dust port, you must take into account many variables, including the CFM rating of the dust collector, the length of hose between the dust collector and the machine, the amount of branches or Y's, and the amount of other open lines throughout the system. Explaining this calculation is beyond the scope of this manual. If you are unsure of your system, consult an expert or purchase a good dust collection "how-to" book.

Connect a 3" flexible dust collection hose to the rear of the fence ram (see **Figure 19**), and use a hose clamp to secure it in place. Tug on the hose to make sure that it is firmly held in place.

⚠CAUTION

DO NOT operate this machine without adequate dust collection. This machine creates substantial amounts of wood dust. Failure to use adequate dust collection system can result in short- and long-term respiratory illness.

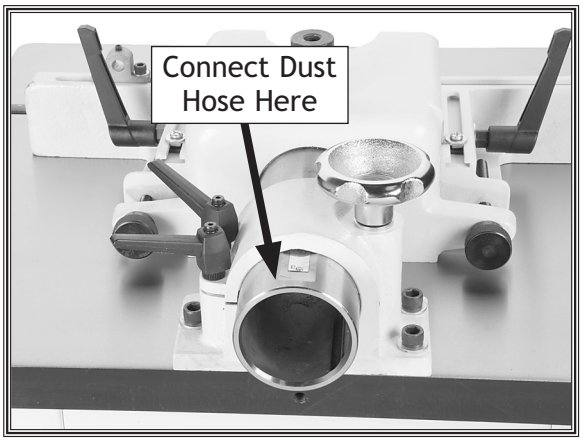


Figure 19. Dust port connection location.

Test Run

Complete this process once you have familiarized yourself with all instructions in this manual.

To test run the shaper, do these steps:

1. Read the entire instruction manual first!

2. Make sure all tools and foreign objects have been removed from the machine.

3. Make sure the spindle switch is in the STOP (center) position.

4. Review **Page 9** and connect your machine to the power source.

5. Turn the shaper ***ON*** by moving the spindle switch to either the forward (FOR) or reverse (REV) position.

   — The shaper should run smoothly with little or no vibration.

   — Immediately turn the shaper ***OFF*** if you suspect any problems, and refer to **Page 50** to trouble-shoot/fix any problems before starting the shaper again.

   — If the source of an unusual noise or vibration is not readily apparent, contact our technical support for help at (360) 734-3482 or contact us online at **tech-support@shopfox.biz**.

6. Move the spindle switch to the STOP position, wait for the spindle to come to a complete stop, then repeat **Step 5** for the opposite direction.

7. Turn the spindle ***ON*** and ***OFF*** in the same direction and notice the direction it is turning.

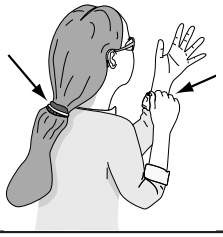
   Note: *When the spindle switch is in the forward position, the spindle should turn counterclockwise as viewed from above. The opposite is true when the switch in the reverse position.*

   — If the spindle rotation direction and the position of the spindle switch before you turned the machine ***OFF*** do not match, disconnect the machine from power, then switch wires #5 and #6 inside the motor wiring junction box (refer to the **Wiring Diagram** on **Page 49** for specific information).

WARNING

Projectiles thrown from the machine could cause serious eye injury. Wear safety glasses to reduce the risk of injury.

WARNING



Loose hair and clothing could get caught in machinery and cause serious personal injury. Keep loose clothing rolled up and long hair tied up and away from machinery.

OPERATIONS

General

This machine will perform many types of operations that are beyond the scope of this manual. Many of these operations can be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. **If at any time you are experiencing difficulties performing any operation, stop using the machine!**

If you are an inexperienced operator, we strongly recommend that you read books or trade articles, or seek training from an experienced shaper operator before performing any unfamiliar operations. **Above all, your safety should come first!**

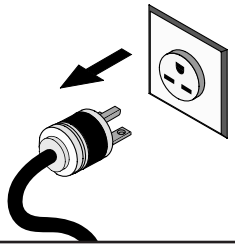
⚠WARNING

Always wear safety glasses or a face shield when operating this machine to avoid eye or face injuries from flying debris. Wood dust may cause short and long-term respiratory illness. To avoid this hazard, always wear a respirator during operation.

⚠WARNING

READ and understand this entire instruction manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

⚠WARNING



Always disconnect the machine from power and wait for the spindle to stop before making adjustments to avoid injuries from unexpected startup or electrocution.

Basic Controls

Refer **Figures 20-21** and read the following descriptions below to become familiar with the basic controls of your shaper.

- **Spindle Switch:** Starts spindle rotation, reverses rotation direction, and turns the motor ***OFF***.
- **Spindle Height Lock:** When tightened, secures the height position of the spindle.
- **Spindle Height Handwheel:** Raises or lowers the spindle and the attached cutter. One full turn of the handwheel is a height change of approximately 0.045".
- **Spindle Height Scale:** Displays the height position of the spindle in inches.

Figure 20. Spindle switch.

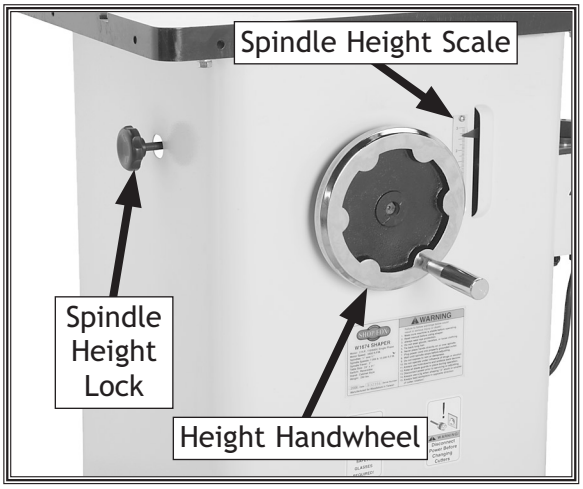


Figure 21. Height handwheel/scale and spindle lock knob.

Locking Switch

The FWD/REV switch can be disabled and locked with a padlock. While the padlock is inserted through the hole on the switch, as shown in **Figure 22**, the motor cannot be started, which reduces the risk of accidental startup by children or unauthorized users.

⚠WARNING

Children or untrained people can be killed or seriously injured by this machine. If machine is accessible to children or other people, always disable and lock the switch before leaving machine unattended! Place key in a well-hidden or secure location.

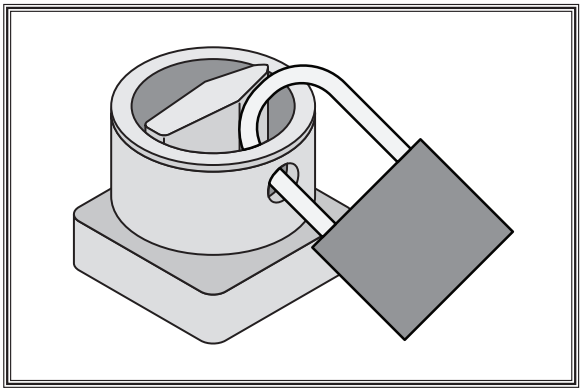


Figure 22. Switch locked with padlock to prevent the motor from starting.

Operation Overview

This overview explains the basic process that happens during an operation with this machine. Familiarize yourself with this process to better understand the remaining parts of the **Operation** section.

To complete a typical operation, the operator does the following:

1. Examines the workpiece to make sure it is suitable for cutting.

2. Installs the cutter onto the spindle and adjusts the spindle height for the operation.

3. Correctly adjusts the safety guard and fence boards for the operation and locks them in place.

4. Checks the outfeed side of the machine for proper support and to make sure the workpiece can safely move past the cutter without interference from other objects.

5. Places the workpiece on the infeed side of the machine and stabilizes it with hold-downs, jigs, or other safety workpiece holding devices.

6. Wears safety glasses and a respirator, and locates push sticks if needed.

7. Starts the machine.

8. Verifies cutter rotation and feed directions.

9. Holds the workpiece firmly and flatly against both the table and fence, and then pushes the workpiece past the cutter at a steady and controlled rate until the workpiece moves completely beyond the cutter.

The operator is very careful to keep the workpiece firmly against the table and fence during the entire cut, while also keeping his hands well away from the spinning cutter.

10. Stops the machine.

Stock Inspection & Requirements

Follow these rules when choosing and cutting stock:

- **Workpiece Material:** Your shaper and cutters are designed to cut wood and wood products ONLY! DO NOT attempt to cut man-made materials (such as glass, metal, plastics, etc.) that may cause the cutter or workpiece to break apart, which could cause serious personal injury or property damage.

- **Foreign Objects:** Nails, staples, dirt, rocks and other foreign objects are often embedded in wood. While cutting, these objects can become dislodged and hit the operator, cause kickback, and break or chip the cutter, which might then fly apart. Always visually inspect your workpiece for these items. If they cannot be removed, do NOT cut the workpiece.

- **Large/Loose Knots:** Loose knots can become dislodged during the shaping operation. Large knots can cause kickback and machine damage. Choose workpieces that do not have large/loose knots or plan ahead to avoid cutting through them.

- **Wet or "Green" Stock:** Cutting wood with a moisture content over 20% causes unnecessary wear on the cutter, increases the risk of kickback, and yields poor results.

- **Excessive Warping:** Workpieces with excessive cupping, bowing, or twisting are dangerous to shape because they are unstable and often unpredictable when being cut. DO NOT use workpieces with these characteristics!

- **Minor Warping:** Workpieces with slight cupping can be safely supported if the cupped side is facing the table or the fence. On the contrary, a workpiece supported on the bowed side will rock during the operation and could cause kickback or severe injury.

Cutter Rotation Direction

Most cutters are designed to rotate counterclockwise and mill the stock from underneath the workpiece, which provides a safety barrier between the spinning cutter and the operator. In this case, the workpiece is fed past the cutter from right to left—against the cutter rotation (see the illustration in **Figure 23**).

However, some cutters are designed to shape from the top of the workpiece, which exposes the operator to the spinning cutter and increases the risk of operator injury. To avoid this hazard, mount this type of cutter upside-down on the spindle, reverse the spindle rotation, then feed the workpiece past the cutter from left to right. Refer to **Cutter Installation** on **Page 28** for detailed instructions.

⚠WARNING

ALWAYS check the direction of the cutter rotation before beginning operation and ALWAYS feed the stock into the cutter AGAINST the cutter rotation. Feeding stock WITH the rotation of the cutter could pull the workpiece from your hands and draw your hands into the spinning cutter, resulting in serious personal injury.

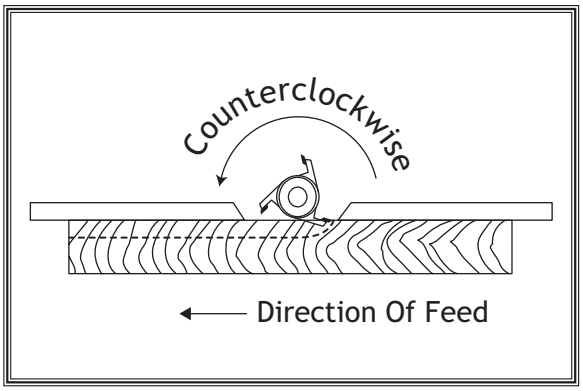


Figure 23. Cutter rotating counterclockwise.

Cutter Height

The cutter height is adjusted with the height handwheel. One full revolution of the handwheel raises/lowers the cutter height approximately 0.045".

To gauge the cutter height in relation to the table, use the height scale or a precision ruler with fine graduations. An alternative method would be to place a sample of the shaped cut next to the cutter.

To change the cutter height:

1. DISCONNECT SHAPER FROM POWER!

2. Loosen the spindle height lock and rotate the height handwheel to bring the cutter to the required height, then re-tighten the lock (see **Figure 24**).

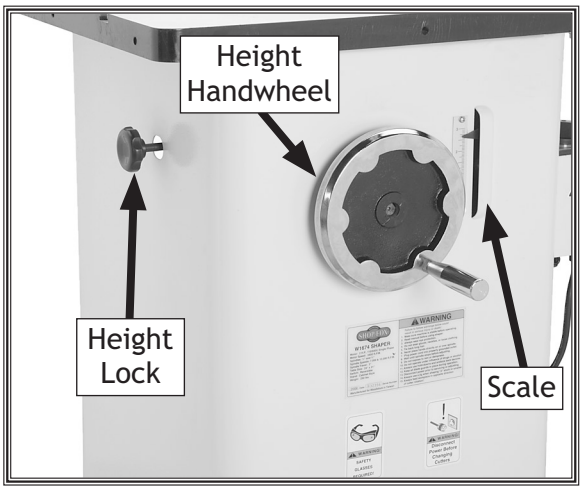


Figure 24. Spindle height controls.

Hold-Downs

⚠WARNING

If the workpiece should rise up when it is against the cutter, kickback could occur. To reduce the chance of kickback and serious personal injury, always properly secure the workpiece with the hold-down devices during operation.

The hold-downs included with your shaper are used to hold the workpiece flat on the table and snug against the fence as it passes the cutter. The position of the hold-down fingers can be adjusted in-or-out or at different angles (see **Figure 25**).

Note: *Make sure the curved part of the hold-down finger is pointing in the direction that the workpiece will move past the cutter or it may stop the workpiece during the operation.*

Tools Needed	**Qty**
Hex Wrenches 3, 5mm	1 Each

To install the hold-downs, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Loosen the fence mount lock lever, then rotate the adjustment knob clockwise until the top fence slot clears the fence assembly housing (see **Figure 26**).

3. Insert two 1/4"-20 x 1/2" cap screws with flat washers in the hold-down bar bracket, then thread two 1/4"-20 T-nuts onto the cap screws one or two turns, making sure that the flat of the T-nuts face down.

4. Slide the assembly into the slot, then tighten the cap screws to secure the bracket in place.

5. Slide two hold-down brackets onto the hold-down bar, as shown in **Figure 27**, insert the hold-downs between the bracket and the bar, then use two 1/4"-20 x 3/8" set screws to secure the hold-downs and the brackets.

6. Insert the hold-down bar into the hold-down bar bracket, as shown in **Figure 27**, then thread one 1/4"-20 x 3/8" set screw into the top of the bracket to secure the assembly in place.

7. Repeat **Steps 2-6** for the other hold-down assembly.

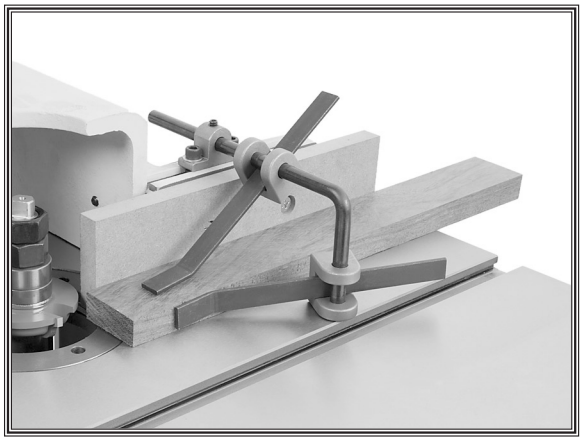


Figure 25. An example of using the hold-downs (safety guard removed for visual clarity.

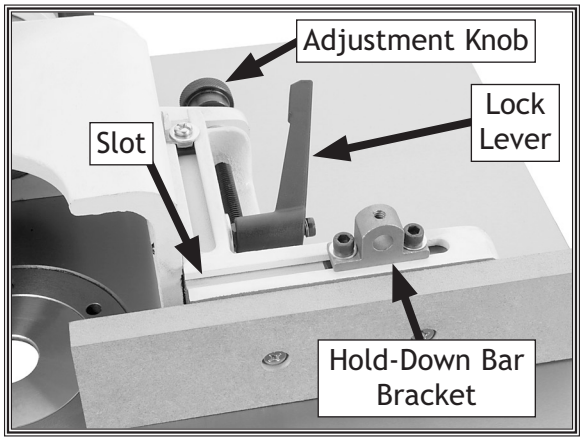


Figure 26. Hold-down bar bracket installed.

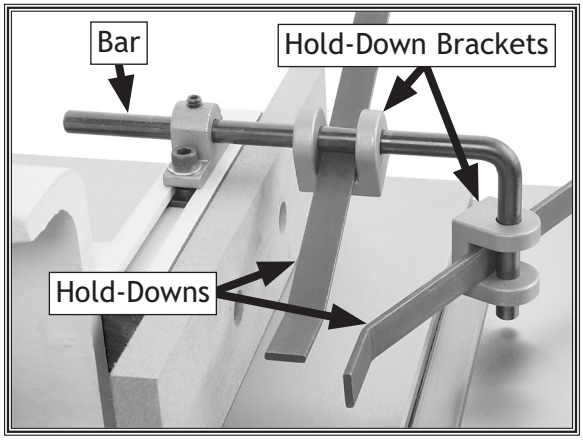


Figure 27. Hold-down assembly installed.

Fence Adjustment

Your shaper features a three-way adjustable fence assembly—the entire fence assembly moves in-or-out, both fence mounts adjust independently in-or-out, and the fence boards independently adjust side-to-side.

Adjusting Fence Assembly In-or-Out

1. DISCONNECT SHAPER FROM POWER!

2. Loosen both ram lock levers shown in **Figure 28**.

3. Rotate the adjustment handwheel to move the fence assembly in-or-out as required for your operation, then re-tighten both lock levers.

   Note: *Use the scale on top of the ram for precise adjustments.*

Adjusting Fence Mount In-or-Out

1. DISCONNECT SHAPER FROM POWER!

2. Loosen the fence mount lock lever (see **Figure 29**).

3. Rotate the adjustment knob to move the fence mount in-or-out, then re-tighten the lock lever to hold it in place.

   Note: *Use the pointer and scale shown in* ***Figure*** **29** *for precise adjustments.*

Adjusting Fence Board Side-to-Side

1. DISCONNECT SHAPER FROM POWER!

2. Loosen the fence board mounting screws (see **Figure 30**), slide the board into the correct position for your operation, then re-tighten the mounting screws.

⚠CAUTION

Keep the fence opening around the cutter as small as possible without interfering with the cutter rotation. This configuration provides the best support for the workpiece and reduces operator exposure to the spinning cutter during operation.

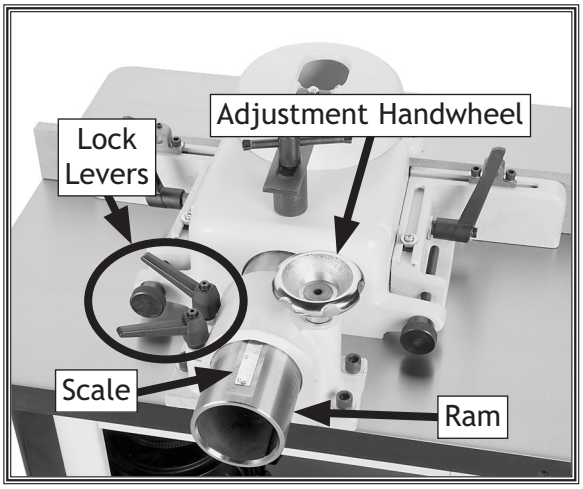


Figure 28. Fence assembly controls.

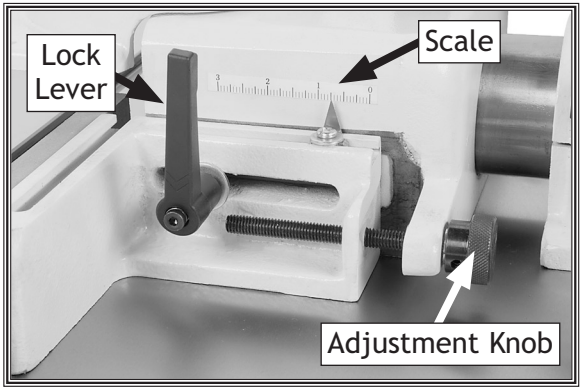


Figure 29. Fence mount controls.

Figure 30. Fence boards (shown without safety guard for visual clarity.

Changing Speeds

The cutter speeds for the Model W1674 are 7000 and 10,000 RPM.

Since the cutter is mounted on the spindle, the terms "spindle speed" and "cutter speed" are often used interchangeably.

Use the following rules when selecting the speed for your operation:

- Use scrap stock similar to the workpiece to find the right cutter speed and feed rate so that the resulting cut is smooth and requires little sanding to finish.
- Reduce cutter speed or increase feed rate if your workpiece becomes glazed or burned.
- Increase cutter speed or decrease feed rate if your workpiece shows a rough or washboard surface.
- The cutting edges of large cutters travel faster than those of smaller cutters at the same spindle speed, as shown in **Figure 31**. Use the slower speed for large cutters.

The cutter speed is changed by adjusting the V-belt position on the motor and spindle pulleys, as illustrated in **Figure 32**.

To reposition the V-belt on the pulleys, do these steps:

1. DISCONNECT SHAPER FROM POWER!
2. Loosen the two hex bolts holding the motor mount to the spindle slide, as shown in **Figure 33.** Do not remove the bolts completely.
3. Slide the motor to the right, then position the V-belt on the pulleys for the selected speed.
4. Slide the motor and motor mount assembly to the left until the V-belt is snug, then tighten the bolts. The amount of V-belt deflection between the pulleys should be approximately 1/4" when pressed with your thumb.
5. Check to make sure the V-belt is correctly aligned on both pulleys (refer to **Pulley Alignment** on **Page 45** for detailed instructions).

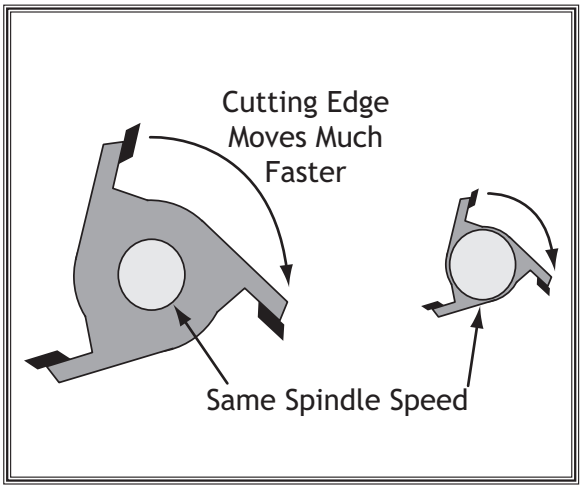


Figure 31. Relative speed of cutting edges between large and small cutters.

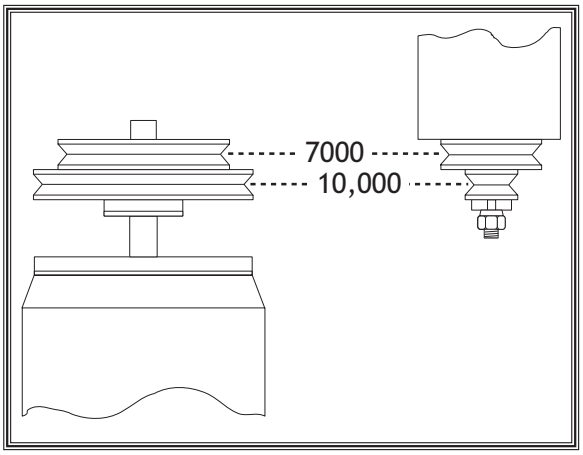


Figure 32. V-belt positions for the two speeds.

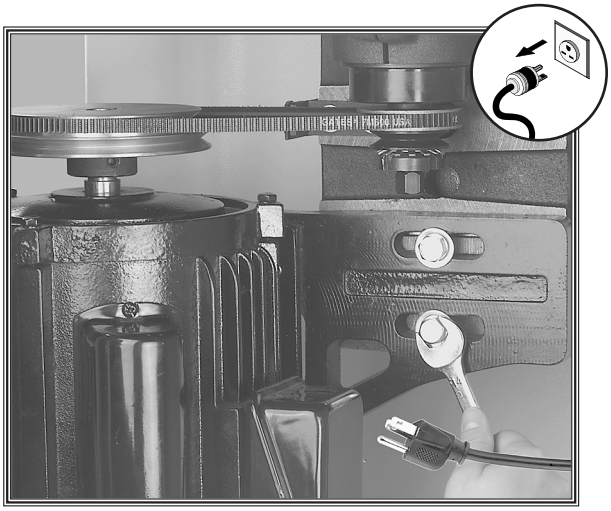


Figure 33. Loosening the motor mount hex bolts.

Table Inserts

Your shaper has an aluminum table insert with a 1 1/8" centerbore, and a larger cast iron insert ring with a 3-1/8" centerbore. When removed, the aluminum insert leaves a 3 1/8" table opening and the insert ring leaves a 5" table opening (see **Figure 34**).

Use the smallest-size opening that will safely accept the cutter to reduce wood chips falling into the machine and causing flying debris. Using the smallest-size opening also allows any unused portion of the cutter to remain below the table surface, which increases operator protection.

If necessary, refer to **Table Insert Adjustment** on **Page 44** for detailed instructions on leveling the inserts with the table.

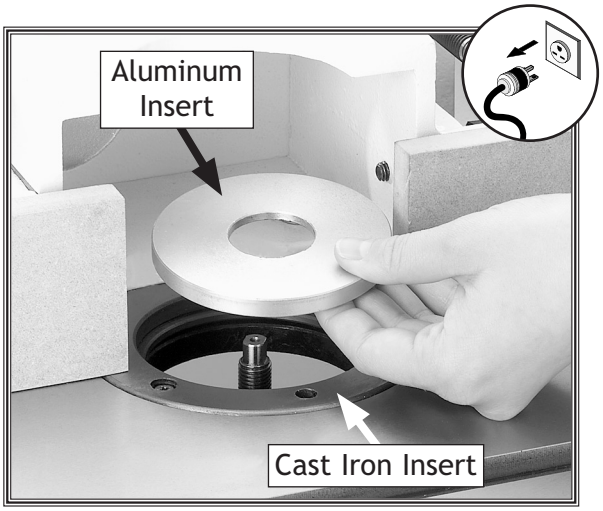


Figure 34. Table insert.

Installing Spindle

The Model W1674 comes with 1/2" and 3/4" shaper spindles. It is very important that any spindle you use is properly seated into the spindle cartridge so that safety is maintained.

Tools Needed	**Qty**
Spindle Wrench Set	1

To install a spindle, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Thread the drawbar into the bottom of the spindle until it is snug, as shown in **Figure 35**.

3. Insert the spindle/drawbar assembly partially into the spindle cartridge, align the spindle keyway with the cartridge guide pin, as shown in **Figure 36**, then fully seat the spindle into the cartridge.

⚠CAUTION

Make sure that the spindle keyway and cartridge guide pin are correctly aligned before tightening the drawbar. Improper assembly creates an unsafe condition that could result in personal injury.

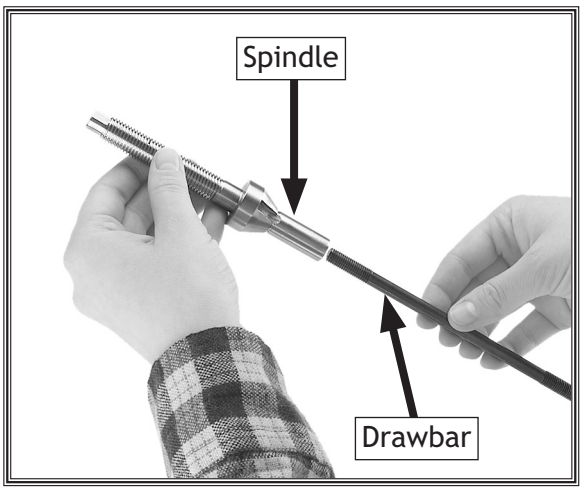


Figure 35. Installing the drawbar into the spindle.

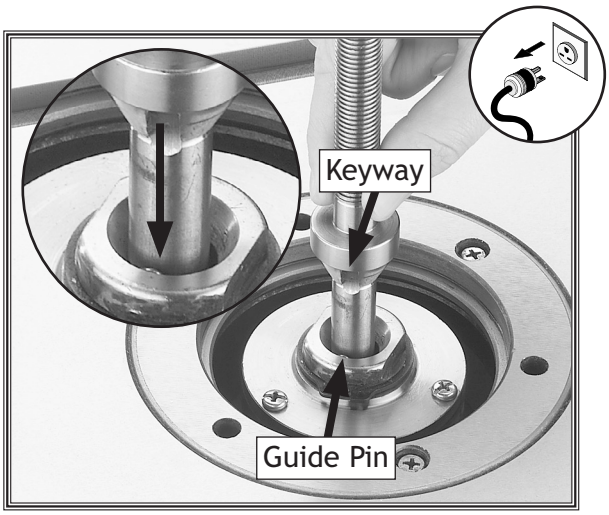


Figure 36. Aligning spindle keyway with the guide pin.

4. Reach into the cabinet from the rear and thread the drawbar nut onto the drawbar with the tapered side of the nut facing up, as shown in **Figure 37**.

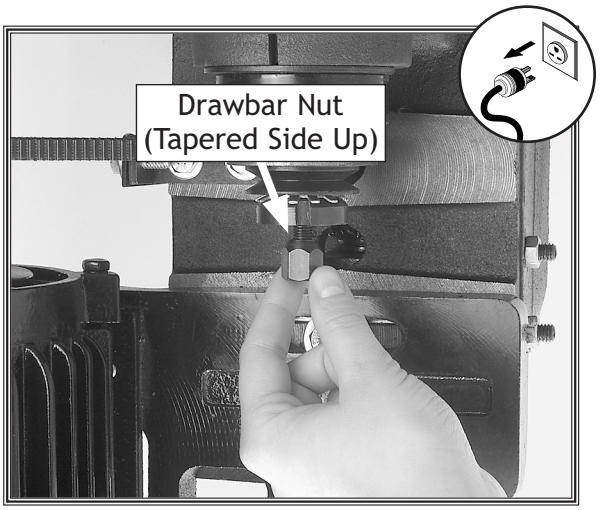


Figure 37. Threading the drawbar nut with the tapered side facing up.

5. Use the spindle wrench set to tighten the drawbar nut until it is snug, as shown in **Figure 38**. DO NOT overtighten the nut, which could make removing the spindle difficult.

Figure 38. Tightening the drawbar nut.

Cutter Installation

The Model W1674 accommodates cutters that have 1/2" or 3/4" centerbores when used with the corresponding spindle.

A large variety of shaper cutters are available through your local Woodstock International Inc. Dealer.

To ensure a safe and efficient operation, follow these rules when installing cutters:

- The cutting edges of large cutters travel faster than smaller ones at the same spindle speed. Cutters with a 3 1/2" or larger outside diameter must be operated at the lower speed of 7000 RPM.
- Wear heavy leather gloves when handling the sharp cutters.
- Keep the spindle, spacers, and cutter clean and free of debris, grease, or oils to avoid binding the spacers or cutter on the spindle.
- Use the smallest insert bore possible to keep the space between the table surface and the cutter to a minimum. This will help keep wood chips from falling into the cabinet, provide better workpiece support, and increase operator protection from the cutter.
- If the cutter is designed to remove material from the top of the workpiece, we recommend you mount the cutter upside down, then reverse the spindle rotation and feed direction. In this configuration, the workpiece provides a safety barrier between the cutter and the operator.
- Always use the largest spindle possible to reduce stress on the spindle bearings.
- Do not attempt to use bushings to compensate for a cutter with a larger bore than the spindle diameter. This could damage the cutter and the machine, and present an injury hazard to the operator. Only use cutters with bores that match the spindle diameter.
- Use the spacers to install the cutter as low as possible on the spindle, which will reduce the wear on the spindle bearings and provide a more efficient cutting operation.

  Note: *Each spindle supplied with your shaper comes with two spindle washers and four spacers in these heights: 1/4", 3/8", 1/2", and 3/4".*

Tools Needed	**Qty**
Spindle Wrench Set	1

To install a cutter, do these steps:

1. DISCONNECT SHAPER FROM POWER!

   Note: *For convenience, remove the fence assembly before performing the following steps.*

2. Remove the two spindle nuts from the spindle.

3. Place the required spindle spacers on the insert, as shown in **Figure 39**.

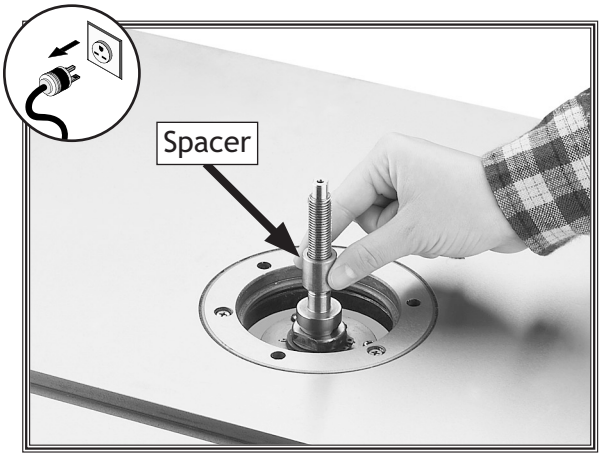


Figure 39. Installing a spindle spacer.

4. Protecting your hands from the sharp edges, slide a spindle washer and then the cutter onto the spindle, making sure the cutting edges are facing in the right direction for your selected rotation (see **Figure 40**).

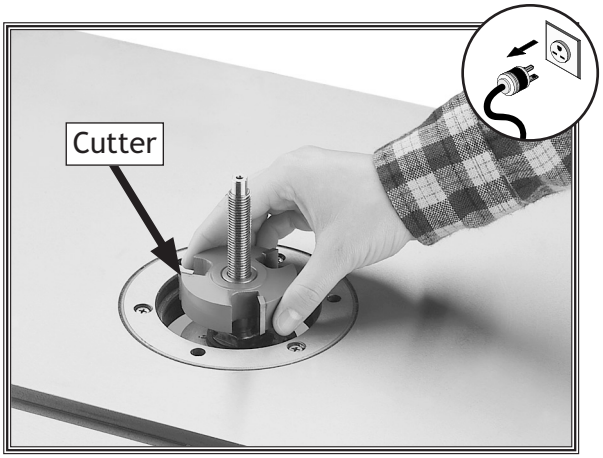


Figure 40. Placing a cutter onto the spindle.

5. Place the remaining spindle washer onto the spindle, then additional spacers as necessary, as shown in **Figure 41**.

Figure 41. Placing the remaining spindle washer and spacer(s) onto the spindle.

6. Thread one spindle nut tightly onto the spindle to secure the components, then thread the second spindle nut against the first to act as a lock nut (see **Figures 42-43**).

⚠WARNING

To avoid the risk of severe injury or amputation, ALWAYS properly install the safety guard onto the shaper before connecting the machine to power.

7. If applicable to your operation, re-install the fence assembly. However, whether you use the fence assembly or not, you MUST re-install the safety guard before re-connecting the machine to power (refer to **Safety Guard** on **Page 31** for detailed instructions on options for mounting the safety guard).

⚠WARNING

Router bits are designed to only cut counterclockwise as viewed from the top. When you are using a router bit adapter and router bits, ALWAYS make sure the spindle is rotating in a COUNTERCLOCKWISE direction and you feed the workpiece from right to left. Otherwise, the workpiece could kickback, or the collet could be loosened and the cutter could be thrown causing serious personal injury or death.

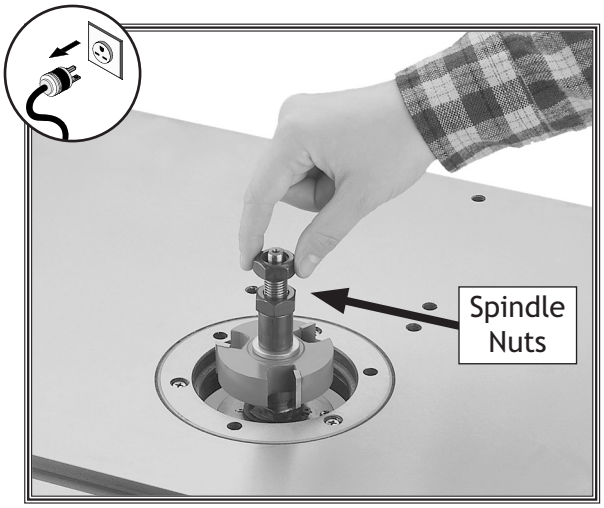
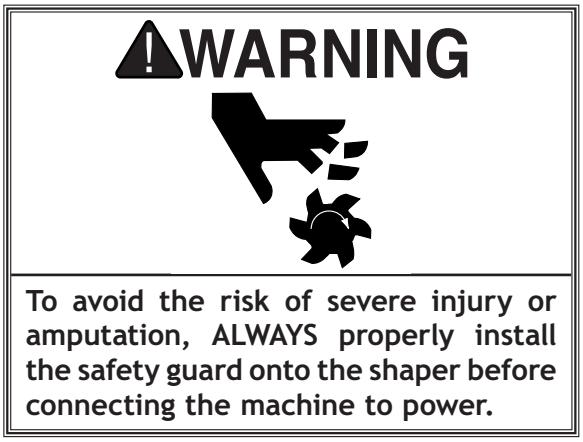


Figure 42. Installing spindle nuts.

Figure 43. Tightening the spindle nuts.

Safety Guard

The safety guard on the Model W1674 is installed with or without the fence assembly, and accepts an adjustable front guard for additional protection from accidental cutter contact during operation.



To avoid the risk of severe injury or amputation, ALWAYS properly install the safety guard onto the shaper before connecting the machine to power.

Safety Guard on Fence Assembly

When the safety guard is mounted on the fence assembly, adjust its position by moving the entire fence assembly (refer to **Fence Adjustment** on **Page 24** for detailed instructions) or by using the T-lock handle to position the guard independently of the fence assembly.

Tools Needed **Qty**
Phillips Screwdriver #2.....1

To install the safety guard on the fence assembly, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Thread and hand-tighten the guard support into the threaded hole on top of the fence assembly (see **Figure 44**).

3. From underneath the safety guard, insert two 1/4"-20 x 5/8" flat head screws into the holes that are in the center of the guard, then secure the shorter guard mounting bar to the safety guard with two 1/4"-20 hex nuts, as shown in **Figure 44**.

4. Secure the safety guard assembly to the guard support with the T-lock handle, and secure the front guard to the safety guard with two knob bolts.

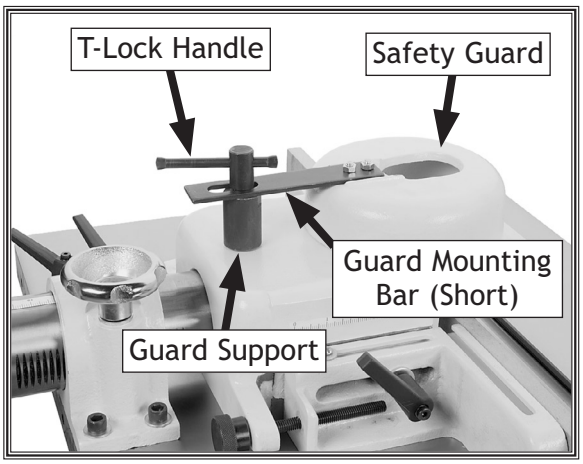


Figure 44. Safety guard installed on the fence assembly.

Free-Standing Safety Guard

Tools Needed	Qty
Wrench or Socket 14mm	1
Hex Wrench 4mm	1

To install the safety guard independent of the fence assembly, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Remove the fence assembly from the table.

3. Position the safety guard shaft holder on the table so that the set screw faces the rear, as shown in **Figure 45**, then secure it to the table with the two provided 3/8"-16 x 3/4" hex bolts.

4. Insert the safety guard shaft into the holder so that the flat faces the rear, then tighten the set screw against the flat to secure the shaft in place, as shown in **Figure 45**.

5. Slide the guard holding bracket onto the shaft, then tighten the knob to hold it in place, as shown in **Figure 46**.

6. From underneath the safety guard, insert two 1/4"-20 x 5/8" flat head screws into the holes in the center of the guard, then secure the longer guard mounting bar to the bracket with two 1/4"-20 hex nuts.

7. Secure the mounting bar and guard to the holding bracket with the T-lock handle, as shown in **Figure 46**.

8. Secure the front guard to the safety guard with the two knob bolts.

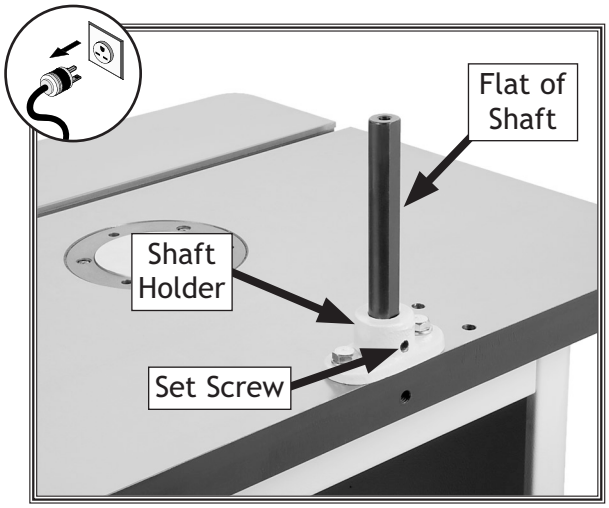


Figure 45. Safety guard shaft and holder installed.

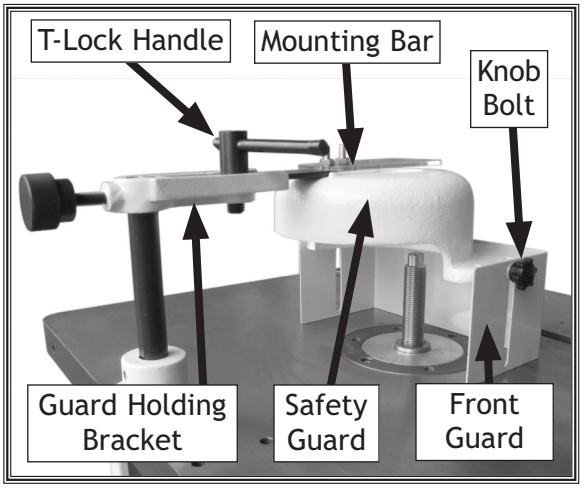


Figure 46. Safety guard installed independent of the fence assembly.

Edge Cutting

The fence boards are a two-piece, independently adjustable system. When removing material from the edge of your workpiece, the outfeed fence can be adjusted to provide support for the workpiece as it passes by the cutter for either full or partial edge cutting.

⚠WARNING

Because the fence may not always be perfectly parallel to the table miter slot, using the miter gauge with the fence could cause the workpiece to bind and kickback toward the operator. DO NOT use the miter gauge to feed the workpiece along the fence when straight shaping. Use a push sticks and hold-downs to keep the workpiece in position.

Full Edge Cutting

1. DISCONNECT SHAPER FROM POWER!

2. Lay a straight piece of stock that is at least 24" in length and the same type of wood and dimensions as the workpiece along the infeed fence board, assuming the feed direction will be from right to left.

3. With the stock held firmly against the infeed fence board, adjust the fence board in-or-out until the stock contacts the cutter for the correct depth of cut, then lock the infeed fence in position.

4. Move the stock away from the cutter, connect the shaper to power, then start the spindle rotating counterclockwise.

5. With the stock firmly held against the infeed fence, safely feed it past the cutter until it reaches the outfeed fence, then stop and pivot the stock away from the cutter.

6. Stop spindle rotation and disconnect the machine from power.

7. When the cutter has come to a complete stop, place the stock against the infeed fence so that one end is in front of the outfeed fence.

8. Adjust and secure the outfeed fence to support the profiled edge of the stock, as illustrated in **Figure 47.**

9. Start the spindle rotating counterclockwise, then feed a test piece past the cutter to verify the cut.

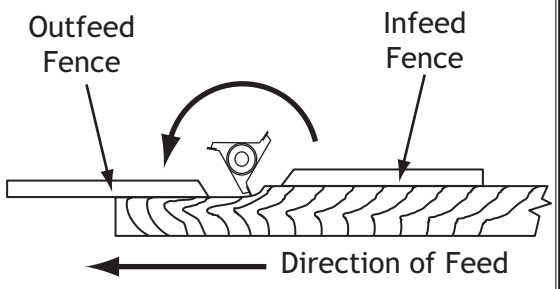


Figure 47. Fence boards correctly positioned for full edge cutting.

Partial Edge Cutting

1. DISCONNECT SHAPER FROM POWER!

2. Adjust the infeed fence to the desired depth of cut, then lock it in place.

3. Use a straightedge to adjust the outfeed fence even with the infeed fence, then lock it in place.

4. Set both fence boards as close to the cutter from side-to-side as possible without interfering with the cutter rotation. Make sure that the fence boards are firmly secured to the brackets and that all knobs and locks are tight.

5. Start the spindle rotating counterclockwise, then feed a test piece past the cutter to verify the cut, as illustrated in **Figure 48**.

   Note: *To reduce the effects of tearout, cut the end grain first when putting an edge around the perimeter of a workpiece, as illustrated in* ***Figure 49***.

⚠WARNING

The sound of this shaper when it is running may be less than other devices that are in operation, such as a dust collector. Because of this, it may be difficult to determine if the shaper is running merely by listening. To avoid serious personal injury, you MUST make certain the shaper is turned *OFF* and is disconnected from power before attempting any setup or adjustments.

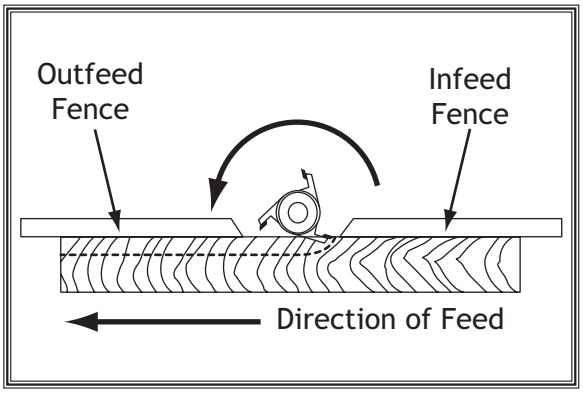


Figure 48. Fence boards setup for partial edge cutting.

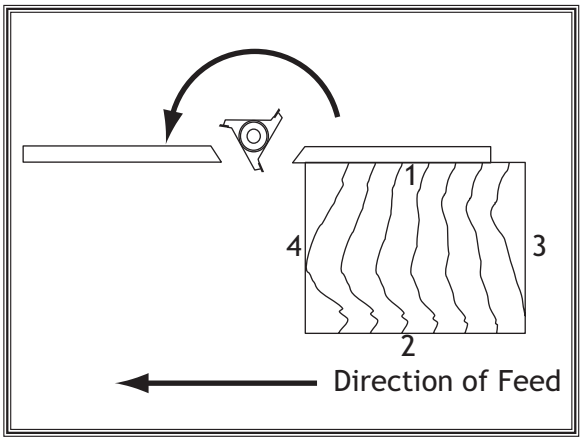


Figure 49. Sequence for cutting the full perimeter of a workpiece.

Cutting Rabbets

Your shaper can perform rabbet cuts by using a straight cutter and properly adjusting the spindle height and the fences to produce the desired L-shape cut in the workpiece (see **Figure 50**).

To make a rabbet cut, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Install a straight cutter and raise it above the table a distance equal to the height of the rabbet cut (see **Figure 50**).

   Note: *To ensure good results for heavy cuts, make multiple light passes and raise the cutter a small amount for each pass.*

3. Adjust the fence boards even with one another so that the cutter is exposed to the workpiece by a distance equal to the depth of the rabbet cut (see **Figure 50**).

4. Turn the machine ***ON*** and safely feed a test piece past the cutter to verify the rabbet cut.

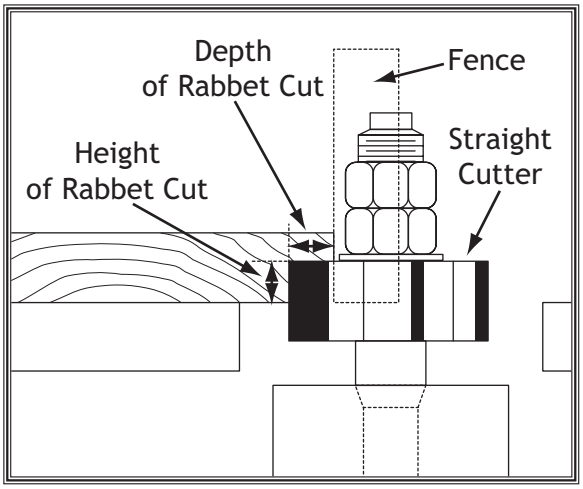


Figure 50. Shaper setup for a rabbet cut.

Shaping Small Stock

Feeding small stock through a shaper is always dangerous. If you must shape small stock, use a zero-clearance fence. This will provide greater protection for the operator, better workpiece support, and reduced tearout on narrow or fragile stock.

To make a zero-clearance fence, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Remove the fence boards from the mounting brackets.

3. Select a piece of straight and smooth stock that is the same height and thickness as the fence boards and approximately 24" long.

4. Cut an outline of the spindle and cutter from the center of the stock selected in **Step 3**, as illustrated in **Figure 51**.

   Note: *Make the outline as close as possible to the cutter and spindle without interfering with rotation.*

5. Create countersunk mounting holes in the zero-clearance fence so that the screws and T-nuts from the split fence can be used to secure it to the mounting brackets in the same manner.

6. Secure the zero-clearance fence to the brackets, check for proper clearance, then run a test piece by the cutter to verify the results.

⚠CAUTION

ALWAYS use hold-downs or featherboards and push sticks when shaping small or narrow stock. These devices keep your hands away from the spinning cutter and sufficiently support the stock to allow a safe and effective cut, reducing the risk of personal injury.

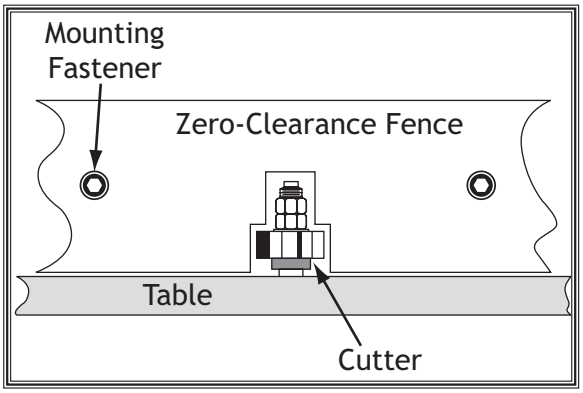


Figure 51. Example of a zero-clearance fence.

Rub Collars

Rub collars are used when shaping curved or irregular workpieces, such as arched doors or round table tops, and to limit the depth of your cut.

There are two types of rub collars—solid and ball bearing. We recommend using ball bearing collars for smooth operation. Woodstock carries an extensive line of rub collars that are available through your local Woodstock International Inc. dealer.

Rub collars are used in one of the following positions:

- **Rub collar below the cutter:** When the rub collar is placed below the cutter, as illustrated in **Figure 52**, the progress of the cut can be observed. However, unintentional movement may lift the workpiece, damaging your work and increasing the risk of injury to the operator. **We DO NOT recommend using the rub collar below the cutter!**

- **Rub collar above the cutter:** When the rub collar is used above the cutter, the cut cannot be seen, as illustrated in **Figure 53**. This offers the advantage that the cut is not affected by slight variations in thickness, and accidental lifting will not damage the workpiece. Simply correct any variation in height by repeating the cut.

- **Rub collar between two cutters:** Using a rub collar between two cutters has the distinct advantage of performing two cuts at once or eliminating the need to change cutters for two different operations, as illustrated in **Figure 54**. Notice the part of the edge that is left uncut rides on the rub collar.

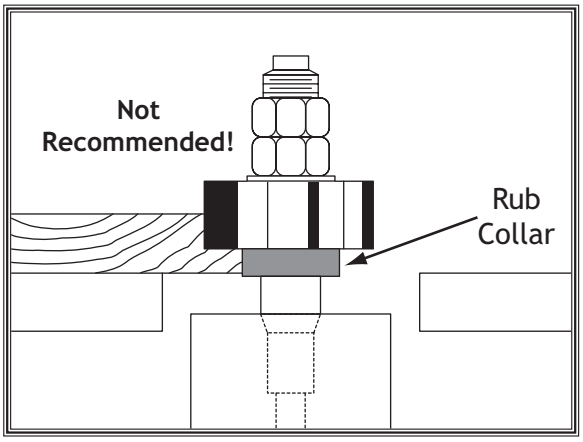


Figure 52. Rub collar installed below the cutter—NOT recommended!

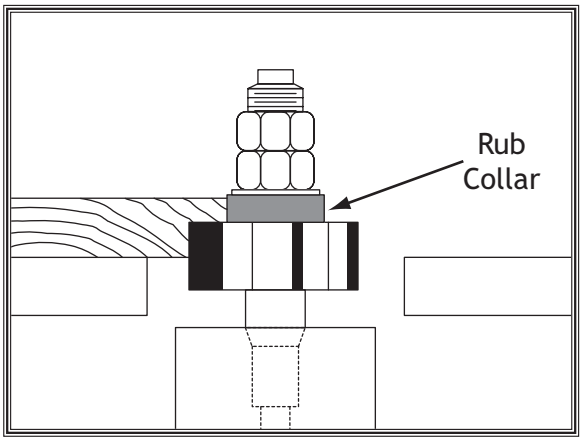


Figure 53. Rub collar installed above the cutter.

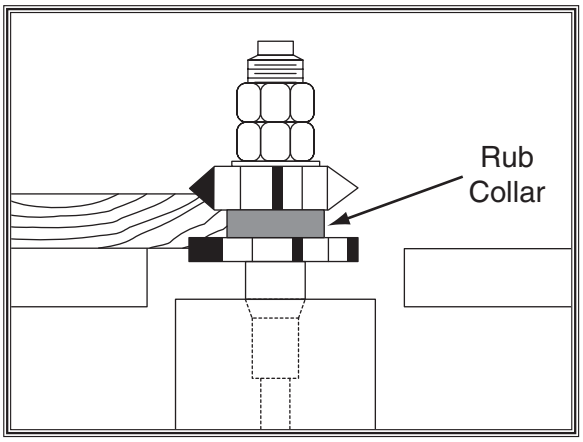


Figure 54. Rub collar installed between two cutters.

Irregular Shaping

⚠WARNING

Freehand or irregular shaping greatly increases the chance that the operator may lose control of the workpiece, which could result in serious personal injury. Therefore, a starting pin or support MUST be used to start an irregular shaping operation.

Irregular or freehand shaping, as illustrated in **Figure 55**, takes a high degree of skill and dexterity. In freehand shaping, the fence assembly is removed so that a starting pin can be used. However, the safety guard is installed using the free-standing method, as shown in **Figure 56**.

With the fence assembly removed, you MUST us a rub collar to guide the workpiece through the cut. Also, use a jig or fixture to increase control of the workpiece and help protect the operator.

To use a starting pin, do these steps:

1. DISCONNECT SHAPER FROM POWER!
2. Remove the fence and safety guard assemblies.
3. Insert a starting pin in the best suited hole on the cast iron insert ring, as shown in **Figure 57**.
4. Re-install the safety guard using the free-standing method before you connect the machine to power (refer to **Free-Standing Safety Guard** on **Page 32** for detailed instructions).
5. Make sure the cutter is properly oriented and installed with a rub collar, then connect the shaper to power and start spindle rotation in the correct direction for your operation.
6. Rest the workpiece against the starting pin, then slowly pivot and feed the workpiece into the cutter. After the cut is started, move the workpiece against the rub collar and away from the starting pin.

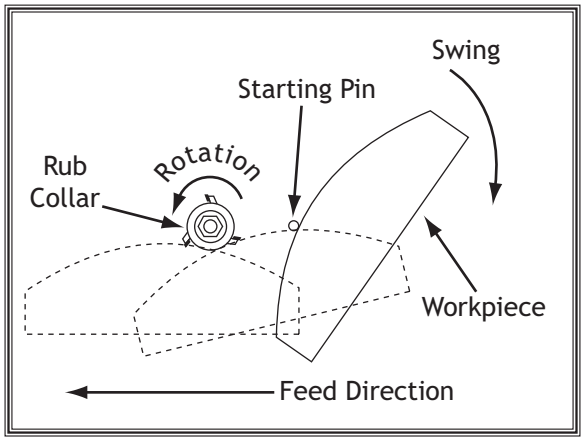


Figure 55. Using a starting pin for irregular shaping.

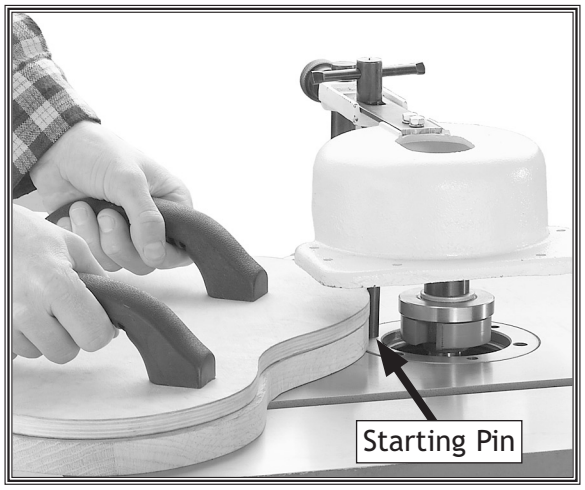


Figure 56. Using a jig and a starting pin for irregular shaping.

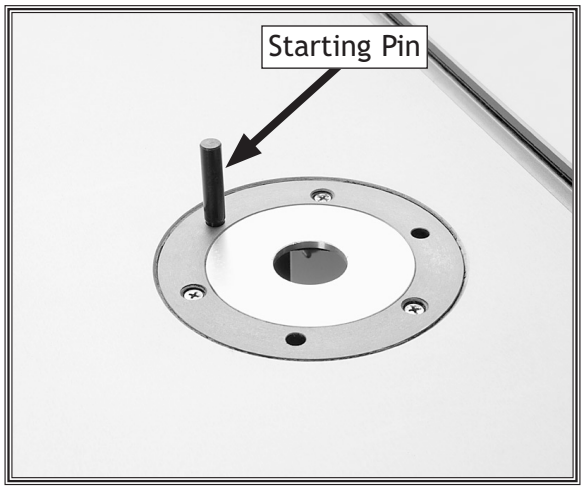


Figure 57. Starting pin installed (shown with safety guard removed for visual clarity).

With some irregular shaping operations, the locations of the starting pin holes are not in the best positions. When this is the case, clamp a wood scrap to the shaper table, as shown in **Figure 58**, then use the wood as the starting support.

Figure 58. Using scrap wood as a starting support (shown without the safety clamp for visual clarity).

Pattern Shaping

The use of templates allows identical parts to be shaped with speed and accuracy. Shaping a pattern begins by attaching a pre-fabricated template to the workpiece. The edge of the template rides against a rub collar on the spindle as the matching profile is cut on the workpiece, as illustrated in **Figure 59**.

Follow these rules when making a template:

- Design the template so that the cutting occurs underneath the rub collar and that screws or clamps will not come into contact with the cutter during operation.
- Install handles on top of the template so that you can comfortably and safely control the operation.
- Make sure the template material will work smoothly with the starting pin/support and the rub collar.
- Consider the rub collar diameter when designing the template.
- Never start the cut on a corner or sharp point of the template.

⚠WARNING

To avoid possible injury from flying debris, design jigs and fixtures so that screws and clamps DO NOT contact the cutter during operation. Make sure the workpiece is held securely to the jig and the jig is stable on the shaper table. A sudden loss of control could lead to serious personal injury.

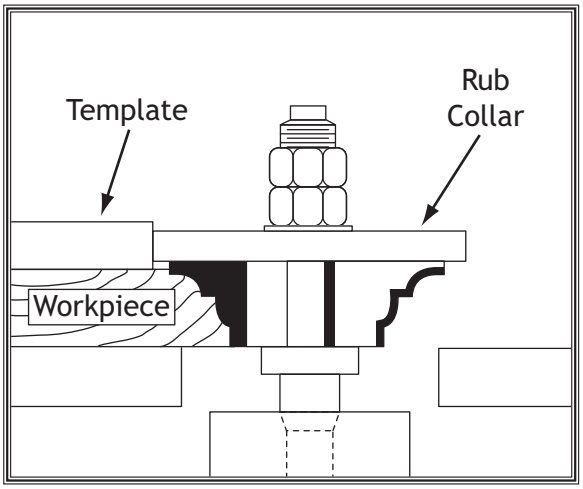


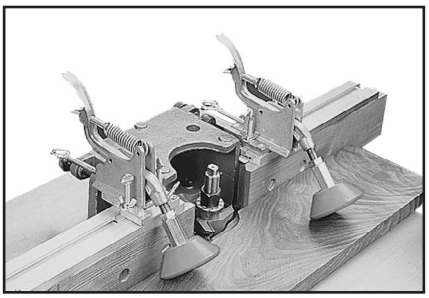
Figure 59. Using a template and a rub collar for pattern shaping.

ACCESSORIES

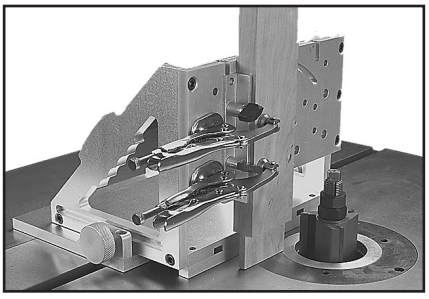
Shaper Accessories

The following shaper accessories may be available through your local Woodstock International Inc. Dealer. If you do not have a dealer in your area, these products are also available through online dealers. Please call or e-mail Woodstock International Inc. Customer Service to get a current listing of dealers at: 1-800-840-8420 or at sales@woodstockint.com.

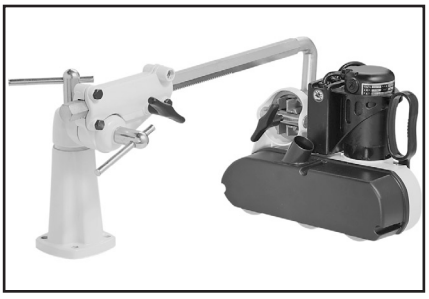
The **W1105 Woodstock Board Buddies®** hold the workpiece against the table and fence during cutting operations. These Board Buddies® are made from die-cast aluminum and feature non-marring green neoprene rubber wheels. Because the wheels turn in both directions, they function as hold-downs rather than anti-kickback devices. Mounts to fences 3" to 3½" high x 1" or wider with the optional **Model W1107** 12" Tracks, or the **Model W1108** 24" Tracks.



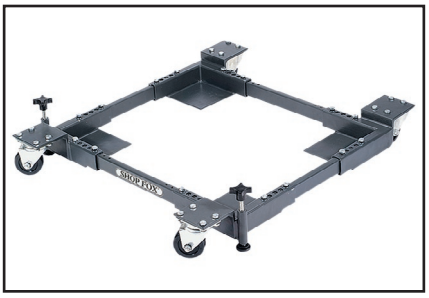
The **W1500 SHOP FOX Right Angle Jig** allows you to make cuts on board ends, and various other cuts with complete accuracy and improved safety. Constructed using top quality aluminum castings and plates which are machined to exacting tolerances. It has the perfect weight-use ratio to dampen vibration, yet is still light enough to easily slide the workpiece through the shaping process. Its quality and precision are evident from the first cut.



The features of the **Model W1764 Small Power Feeder** include: ⅛ HP, 110V, 1.2A motor; variable number of speeds between 6½–39 FPM; three synthetic rubber wheels (1⅛"W x 3"D); forward and reverse feed; X, Y, and Z adjustments; 13" vertical movement; and 11" horizontal movement.



The **D2057A SHOP FOX® Adjustable Mobile Base** supports your shaper so you can move it easily and lock it in position. Designed for long term and frequent moving of heavy machinery.



MAINTENANCE

General

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

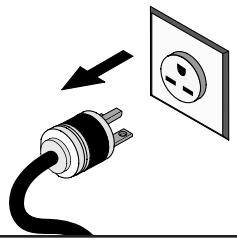
Note: *This maintenance schedule is based on average daily usage. Adjust the maintenance schedule to match your usage to keep your shaper running smoothly and to protect your investment.*

Daily:
- Clean and protect the top surfaces.
- Check/tighten loose mounting bolts.
- Check/replace damaged or worn cutters.
- Check/repair worn or damaged wires.
- Check/resolve any other unsafe condition.

Weekly:
- Clean the inside of the cabinet.
- Check the V-belt condition and tension (**Page 43**).

Monthly:
- Lubricate the spindle slide and leadscrew (**Page 42**).

WARNING



MAKE SURE that your machine is unplugged during all maintenance procedures! If this warning is ignored, serious personal injury may occur.

Cleaning

Frequently blow off sawdust with compressed air. This is especially important for the elevation mechanism and the motor. Dust build-up around the motor is a sure way to decrease its lifespan.

Occasionally it will become necessary to clean with more than compressed air. Clean metal-to-metal contact areas inside the cabinet with a citrus cleaner or mineral spirits and a stiff wire brush or steel wool. Make sure the internal workings are dry before using the shaper again, so that wood dust will not accumulate. After cleaning, re-lubricate the appropriate parts.

Table & Base

Tables can be kept rust-free with regular applications of products like SLIPIT®. For long term storage you may want to consider products like Boeshield T-9™.

Lubrication

Since all bearings are sealed and permanently lubricated, simply leave them alone until they need to be replaced. Do not lubricate them. However, the spindle slide and leadscrew do need lubrication.

To lubricate the spindle slide and leadscrew, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Use the spindle height handwheel to lower the spindle all the way, then access the elevation assembly through the rear of the cabinet (see **Figure 60**).

3. Use mineral spirits, shop rags, and a stiff brush to clean away grease and built-up grime from the surfaces of both slides and the threads of the leadscrew, then apply a thin coat of gear grease to these surfaces.

4. Fully raise and lower the spindle to distribute the grease.

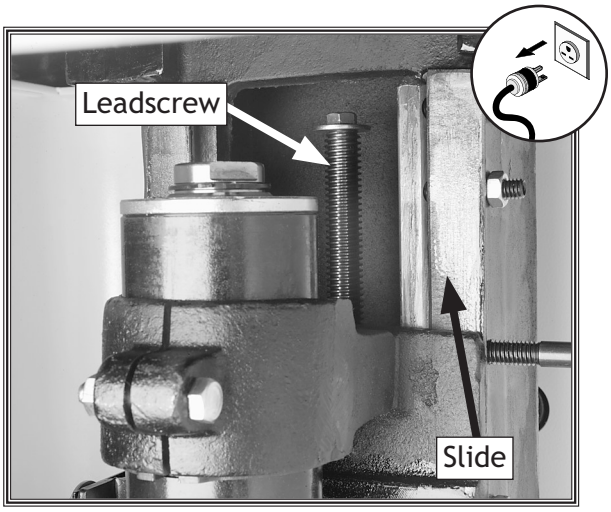


Figure 60. Spindle slide and leadscrew.

V-Belt Tension & Replacement

The V-belt transfers power from the motor to the spindle. If the V-belt does not have the proper tension or is damaged in any way, the shaper will not operate optimally and unnecessary wear on the moving parts will occur. Regularly check the V-belt tension and replace it when necessary.

Tools Needed	**Qty**
Wrench or Socket 14mm	1

To tension the V-belt, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Loosen the two hex bolts holding the motor mount to the spindle slide, as shown in **Figure 61.** Do not remove the bolts completely.

3. If the V-belt is cracked, excessively worn, or damaged, slide the motor to the right, then replace the V-belt.

4. To tension the V-belt, slide the motor to the left until the V-belt is snug, then tighten the bolts. The amount of V-belt deflection between the pulley should be approximately 1/4" when moderate pressure is applied, as illustrated in **Figure 62**.

5. When the V-belt is adjusted properly, re-tighten the motor mount hex bolts.

6. Check to make sure the V-belt is correctly aligned on both pulleys (refer to **Pulley Alignment** on **Page 45** for detailed instructions).

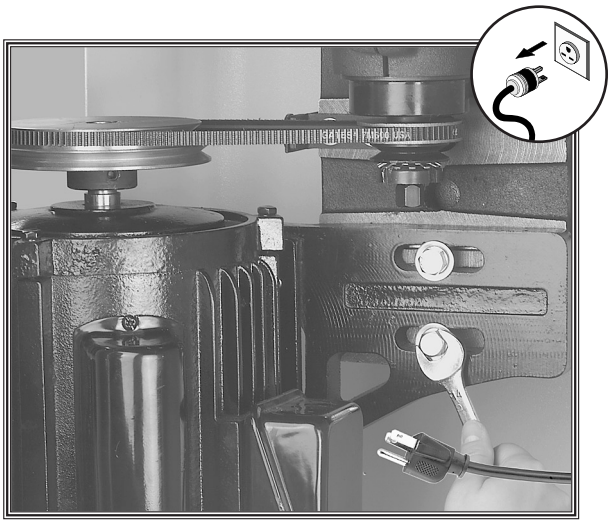


Figure 61. Loosening the motor mount hex bolts.

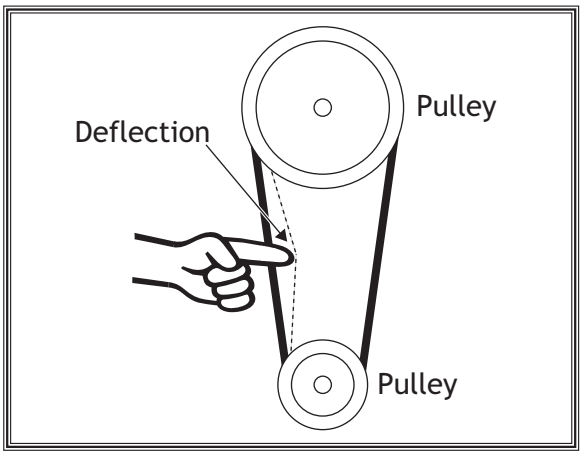


Figure 62. Checking V-belt tension.

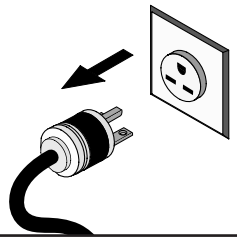
SERVICE

General

This section covers the most common service adjustments or procedures that may need to be made during the life of your machine.

If you require additional machine service not included in this section, please contact Woodstock International Technical Support at (360) 734-3482 or send e-mail to: **tech-support@shopfox.biz**.

⚠WARNING



MAKE SURE that your machine is unplugged during all service procedures! If this warning is ignored, serious personal injury may occur.

Table Insert Adjustment

The aluminum table insert is held in place by a cast iron insert ring, which should be adjusted level with the table top (see **Figure 63**). This is necessary to avoid the workpiece catching on the insert or ring during operation, causing an unsafe condition and poor cutting results.

Tools Needed	**Qty**
Phillips Screwdriver #2	1
Standard Screwdriver #2	1
Precision Straightedge	1

To make the insert and insert ring level with the table top, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Remove the table insert, then remove the three Phillips screws that secure the insert ring to the table top.

   Note: *Notice that there is a barrel screw underneath each of the Phillips screws (see **Figure 64**).*

3. Lay a precision straightedge across the insert ring and the table, then adjust the barrel screws until the insert ring is level with the table top in all directions.

4. Replace the Phillips screws, but do not overtighten them.

5. Replace the table insert, then use the straightedge to re-check the inserts. If necessary, repeat this procedure until both the insert ring and table insert are completely level with the table top in all directions.

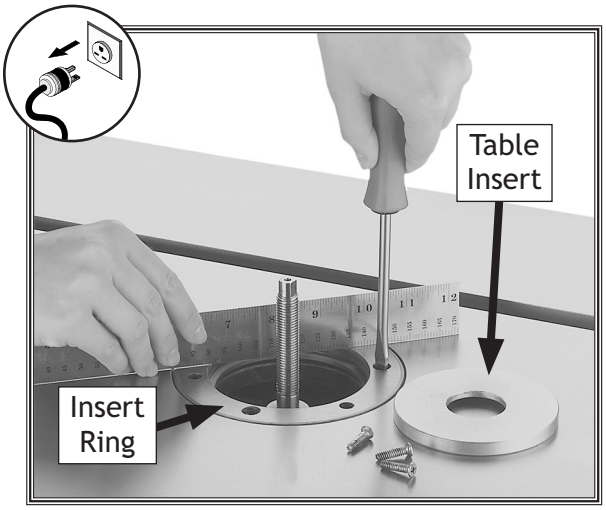


Figure 63. Leveling the insert ring.

Figure 64. Insert ring barrel screw.

Fence Board Alignment

For safe and accurate shaping, the fence boards must be parallel with one another so that they properly support the workpiece through the entire cutting operation.

Tools Needed	Qty
Phillips Screwdriver #2	1
Precision Straightedge 24"	1
Shims	As Needed

To check and align the fence boards parallel with each other, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Make sure the fence boards are even with each other, then place the straightedge against both fence boards, as shown in **Figure 65**.

   — If there is a gap between the straightedge and the fence boards, use shims as needed between the fence boards and the mounting brackets to make the boards completely parallel with each other along their entire length.

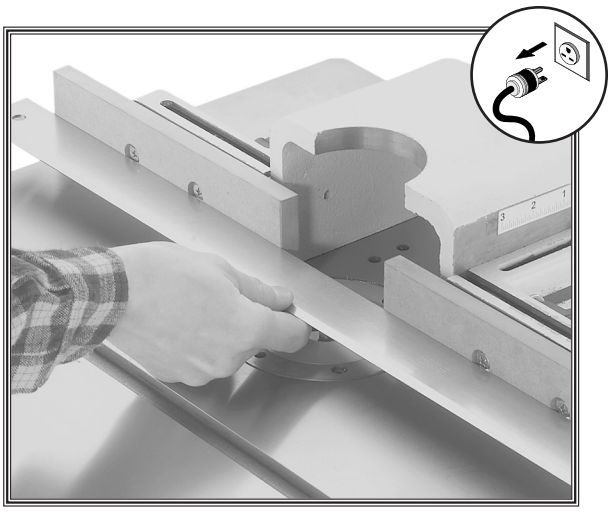


Figure 65. Checking fence board parallelism.

Pulley Alignment

Pulley alignment is important to the performance of your shaper. If the pulleys are just slightly out of alignment, the shaper may suffer from power loss and decreased V-belt life. When the pulleys are parallel and aligned with each other, they are said to be coplanar—in the same plane.

Checking Pulley Coplanarity

Tools Needed	Qty
Precision Straightedge	1

To check the alignment of the pulleys, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Reach into the rear of the cabinet, then hold the straightedge up to the pulleys to determine if they are both aligned and parallel, as shown in **Figure 66**.

   — If the pulleys are not parallel or aligned with each other, perform the appropriate steps in the following procedures.

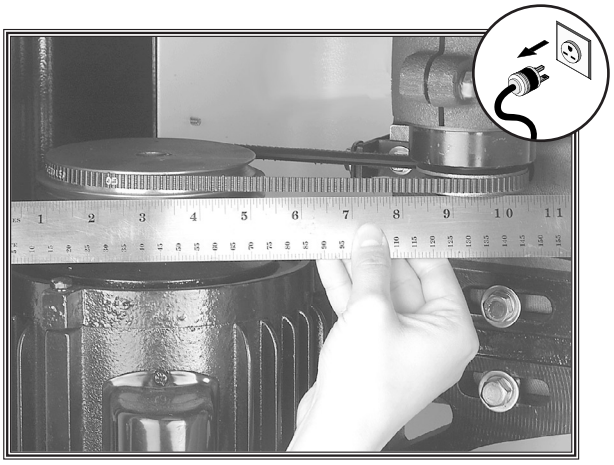


Figure 66. Checking pulley alignment.

Adjusting Pulleys Parallel

Tools Needed	Qty
Precision Straightedge	1
Phillips Screwdriver #2	1
Wrench or Socket 12mm	1
Wrench or Socket 14mm	1

To make the pulleys parallel, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Remove the motor cover from the cabinet, then loosen the two motor mounting hex bolts that are behind the motor mount (see **Figure 67**).

3. Reach into the rear of the cabinet and loosen the two motor mount hex bolts directly under the spindle cartridge.

4. Using the straightedge as a guide, rotate the motor assembly until the motor pulley is parallel with the spindle pulley, then re-tighten the four motor mount hex bolts.

5. Replace the motor cover before connecting the machine to power.

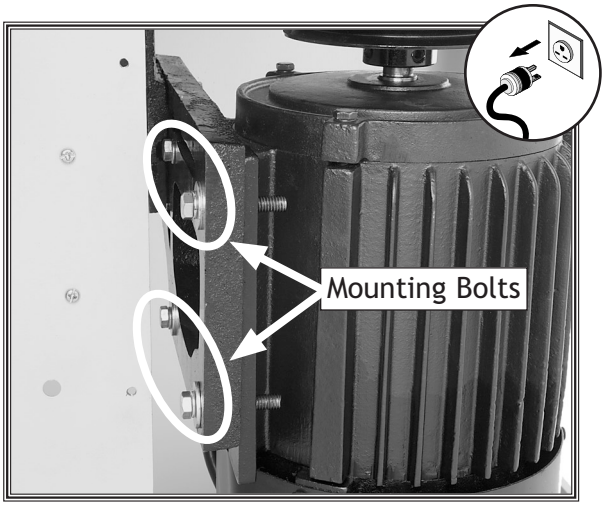


Figure 67. Motor mounting bolts behind the motor mount.

Aligning Pulleys

Tools Needed	Qty
Precision Straightedge	1
Wrench or Socket 12mm	1

To align the pulleys, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Reach into the rear of the cabinet, then loosen the hex bolt on the spindle cartridge bracket, as shown in **Figure 68**.

3. Using the straightedge as a guide, adjust the height of the spindle cartridge until the pulleys are aligned, then re-tighten the bracket hex bolt.

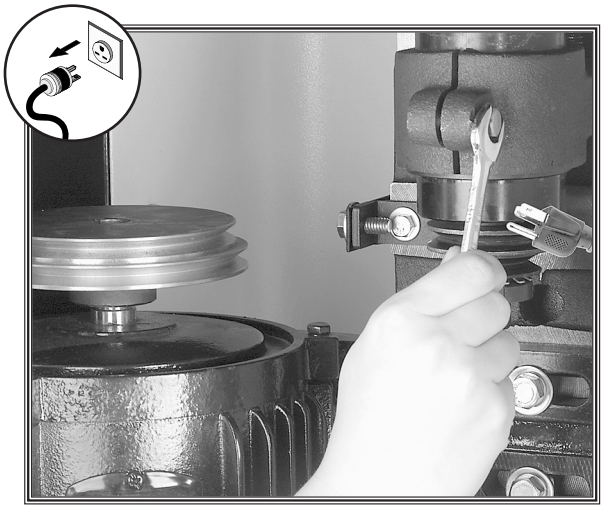


Figure 68. Spindle cartridge bracket hex bolt.

Gib Adjustment

The gib controls the smoothness of the slide movement, as well as, the run out or end play of the spindle. Tightening the gibs too much will make it hard to adjust the height of the spindle and cause excessive wear on the slide. Loosening the gibs too much will introduce spindle end play and cause poor cutting results and excessive wear on the spindle bearings.

Checking Gib Adjustment

1. DISCONNECT SHAPER FROM POWER!

2. Use the spindle height handwheel to raise the spindle to its highest position.

   — Notice the movement of the handwheel. If it is difficult to turn or you feel resistance from the spindle slide, the gibs may need to be loosened.

3. Use the spindle lock to hold the spindle in place, then attempt to wiggle the top of the spindle. If there is movement, the gibs may need to be tightened.

Adjusting the Gibs

Tools Needed	Qty
Wrench 12mm	1
Hex Wrench 4mm	1

To adjust the gibs, do these steps:

1. DISCONNECT SHAPER FROM POWER!

2. Loosen the jam nuts on the gib adjustment set screws (see **Figure 69**).

3. Evenly adjust the set screws small amounts, then test the results.

4. When you are satisfied with the gib adjustment, re-tighten the jam nuts without turning the set screws.

5. Re-check the gib adjustment. If necessary, repeat this procedure.

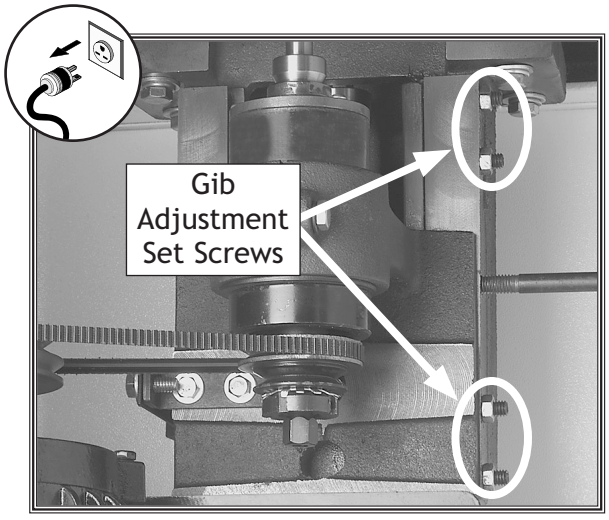


Figure 69. Gib adjustment set screws.

SERVICE

Electrical Safety Instructions

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Study this diagram carefully. If you notice differences between your machine and these wiring diagrams, call Woodstock International Technical Support at (360) 734-3482.

⚠WARNING

1. **SHOCK HAZARD.** Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

2. **QUALIFIED ELECTRICIAN.** Due to the inherent hazards of electricity, only a qualified electrician should perform wiring tasks on this machine. If you are not a qualified electrician, get help from one before attempting any kind of wiring job.

3. **WIRE CONNECTIONS.** All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

4. **WIRE/COMPONENT DAMAGE.** Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components before completing the task.

5. **MOTOR WIRING.** The motor wiring shown in these diagrams is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the motor junction box.

6. **MODIFICATIONS.** Using aftermarket parts or modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire.

7. **CAPACITORS/INVERTERS.** Some capacitors and power inverters store an electrical charge for up to five minutes after being disconnected from the power source. To avoid being shocked, wait at least this long before working on these components.

8. **ELECTRICAL REQUIREMENTS.** You MUST follow the electrical requirements at the beginning of this manual when connecting your machine to a power source.

9. **EXPERIENCING DIFFICULTIES.** If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (360) 734-3482.

NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.shopfox.biz.

WIRING DIAGRAM COLOR KEY

BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu	TURQUOISE	Tu
RED	Rd	ORANGE	Or	PINK	Pk		

SERVICE

Wiring Diagram

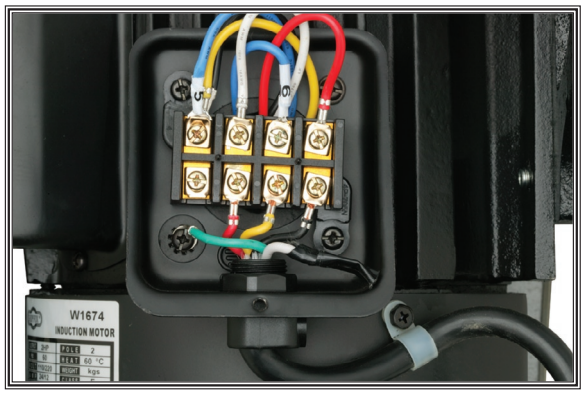


Figure 70. Motor wiring.

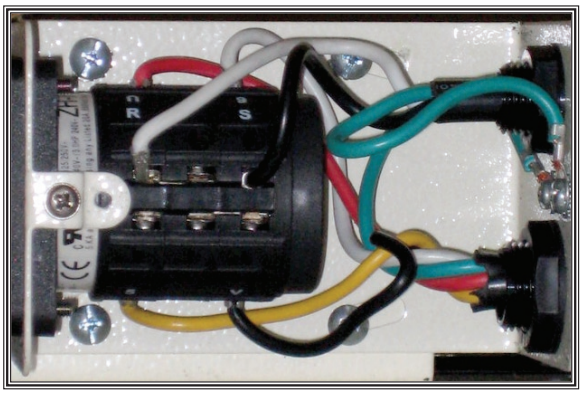
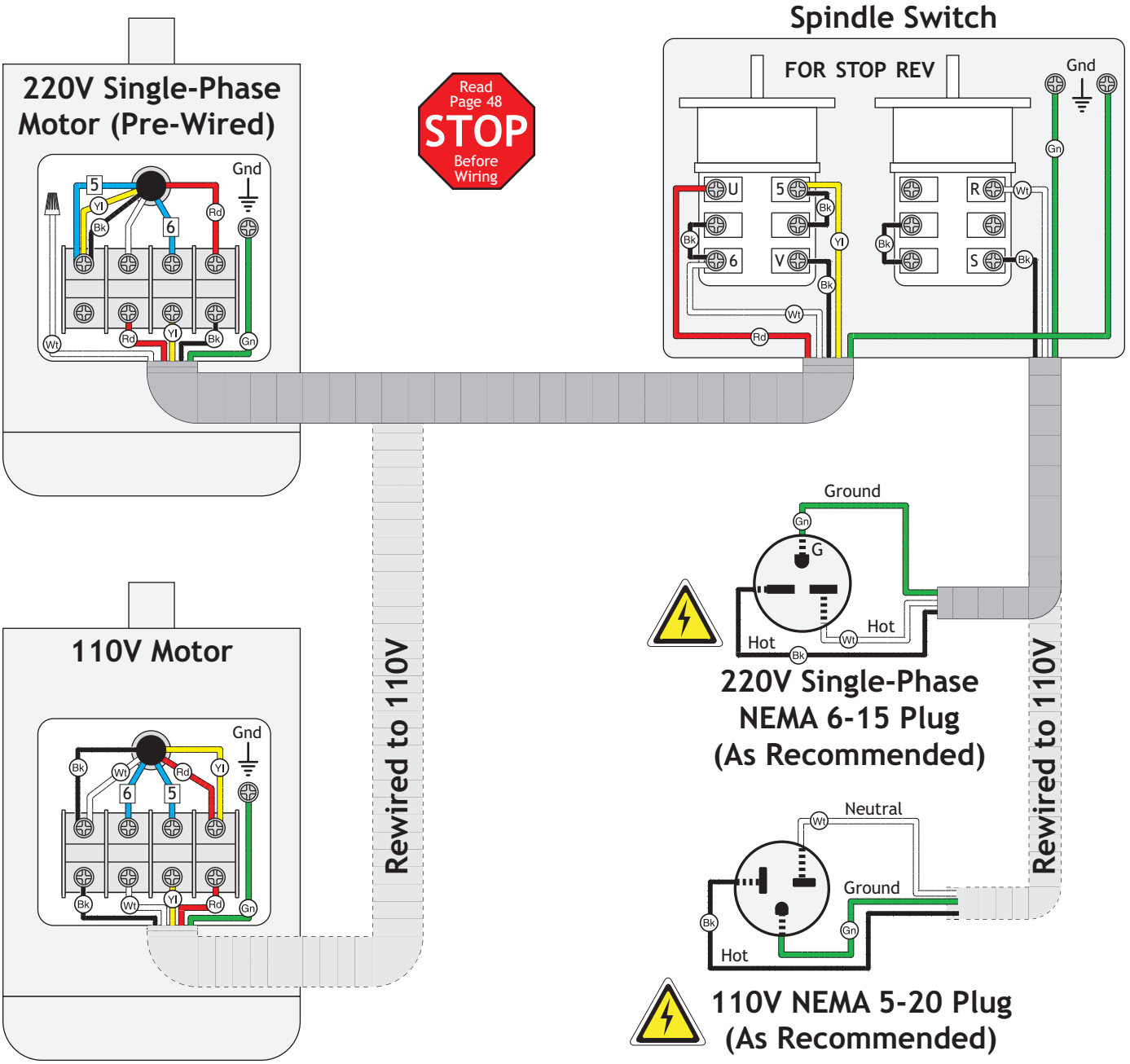
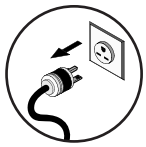


Figure 71. Spindle switch wiring.



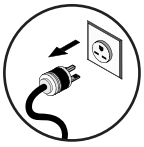
Troubleshooting

This section covers the most common problems and corrections with this type of machine. **WARNING! DO NOT make any adjustments until power is disconnected and moving parts have come to a complete stop!**



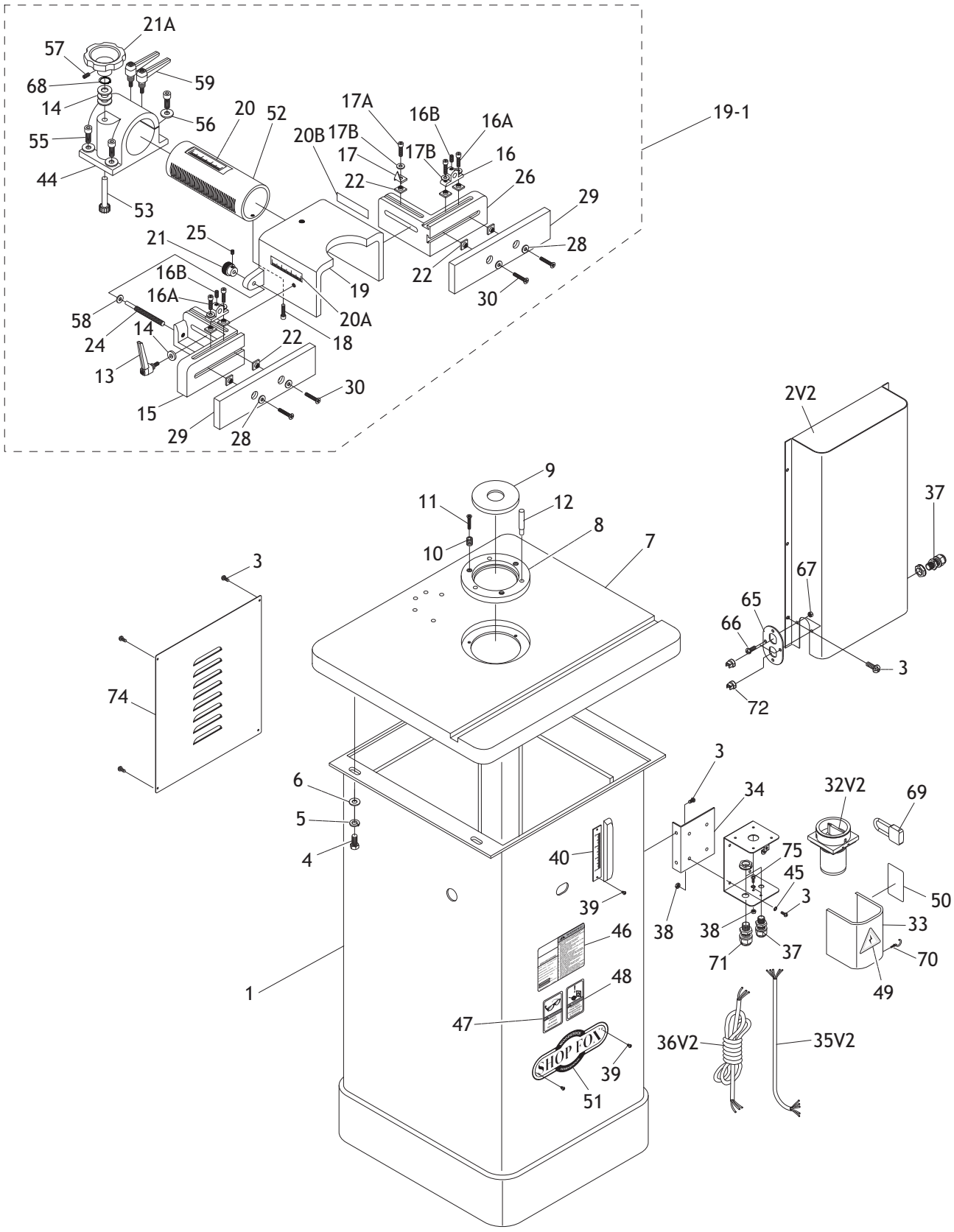
PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Machine does not start or a breaker trips.	1. Power supply switched OFF or at fault. 2. Plug/receptacle at fault/wired wrong. 3. Motor connection wired wrong. 4. Thermal overload relay has tripped. 5. Wall circuit breaker tripped. 6. Wiring open/has high resistance. 7. Start capacitor at fault. 8. Spindle switch at fault. 9. Motor at fault.	1. Ensure power supply is ***ON***/has correct voltage. 2. Test for good contacts; correct the wiring. 3. Correct motor wiring connections (**Page 49**). 4. Reset; adjust trip load dial if necessary; replace. 5. Ensure circuit size is correct/replace weak breaker. 6. Check/fix broken, disconnected, or corroded wires. 7. Test/replace if faulty. 8. Replace switch. 9. Test/repair/replace.
Machine stalls or is underpowered.	1. Workpiece material not suitable for machine. 2. Fence/jig loose or misaligned. 3. V-belt slipping. 4. Motor wired incorrectly. 5. Plug/receptacle at fault. 6. Pulley slipping on shaft. 7. Motor bearings at fault. 8. Machine undersized for task. 9. Motor overheated. 10. Spindle switch at fault. 11. Motor at fault.	1. Only cut wood/ensure moisture is below 20%. 2. Adjust fence/jig. 3. Tension/replace V-belt (**Page 43**). 4. Wire motor correctly (**Page 49**). 5. Test for good contacts/correct wiring. 6. Replace loose pulley/shaft. 7. Test/repair/replace. 8. Use correct, sharp cutter; reduce feed rate/depth of cut. 9. Clean motor, let cool, and reduce workload. 10. Test/replace switch. 11. Test/repair/replace.
Machine has vibration or noisy operation.	1. Motor or component loose. 2. Cutter at fault. 3. V-belt worn or loose. 4. Shaper bit or spindle at fault. 5. Pulley loose. 6. Motor mount loose/broken. 7. Machine incorrectly mounted. 8. Motor fan rubbing on fan cover. 9. Motor bearings at fault.	1. Inspect/replace damaged bolts/nuts, and re-tighten. 2. Replace damaged cutter. 3. Tension/replace V-belt (**Page 43**). 4. Replace cutter; tighten loose spindle; replace defective spindle or spindle cartridge. 5. Realign/replace shaft, pulley, set screw, and key. 6. Tighten/replace. 7. Tighten mounting bolts; relocate/shim machine. 8. Fix/replace fan cover; replace loose/damaged fan. 9. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Spindle does not raise or lower easily.	1. Spindle slide or leadscrew is clogged with sawdust.	1. Clean the spindle slide and leadscrew, then lubricate them (refer to **Page 42**).
Workpiece is burned when cut.	1. Dull cutter. 2. Too slow of a feed rate. 3. Pitch build-up on cutter. 4. Cutter rotating in the wrong direction. 5. Taking too deep of a cut.	1. Replace cutter or have it professionally sharpened. 2. Increase feed speed. 3. Clean cutter with a blade and bit cleaning solution. 4. Reverse the direction of the cutter rotation. 5. Make several passes of light cuts.
Fuzzy grain.	1. Wood may have high moisture content or surface wetness. 2. Dull cutter.	1. Check moisture content and allow to dry if moisture is more than 20%. 2. Replace or have cutter professionally sharpened.
Chipping.	1. Knots or conflicting grain direction in wood. 2. Nicked or chipped cutter. 3. Feeding workpiece too fast. 4. Taking too deep of a cut. 5. Cutting against the grain of the wood.	1. Inspect workpiece for knots and grain direction; only use clean stock. 2. Replace the cutter, or have it professionally sharpened. 3. Slow down the feed rate. 4. Take a smaller depth of cut. (Always reduce cutting depth when working with hard woods.) 5. Cut with the grain of the wood.
Divots in the edge of the cut.	1. Inconsistent feed speed. 2. Inconsistent pressure against the fence and rub collar. 3. Fence not adjusted correctly.	1. Move smoothly or use a power feeder. 2. Apply constant pressure. 3. Adjust fence.



PARTS

Main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36V2
35V2
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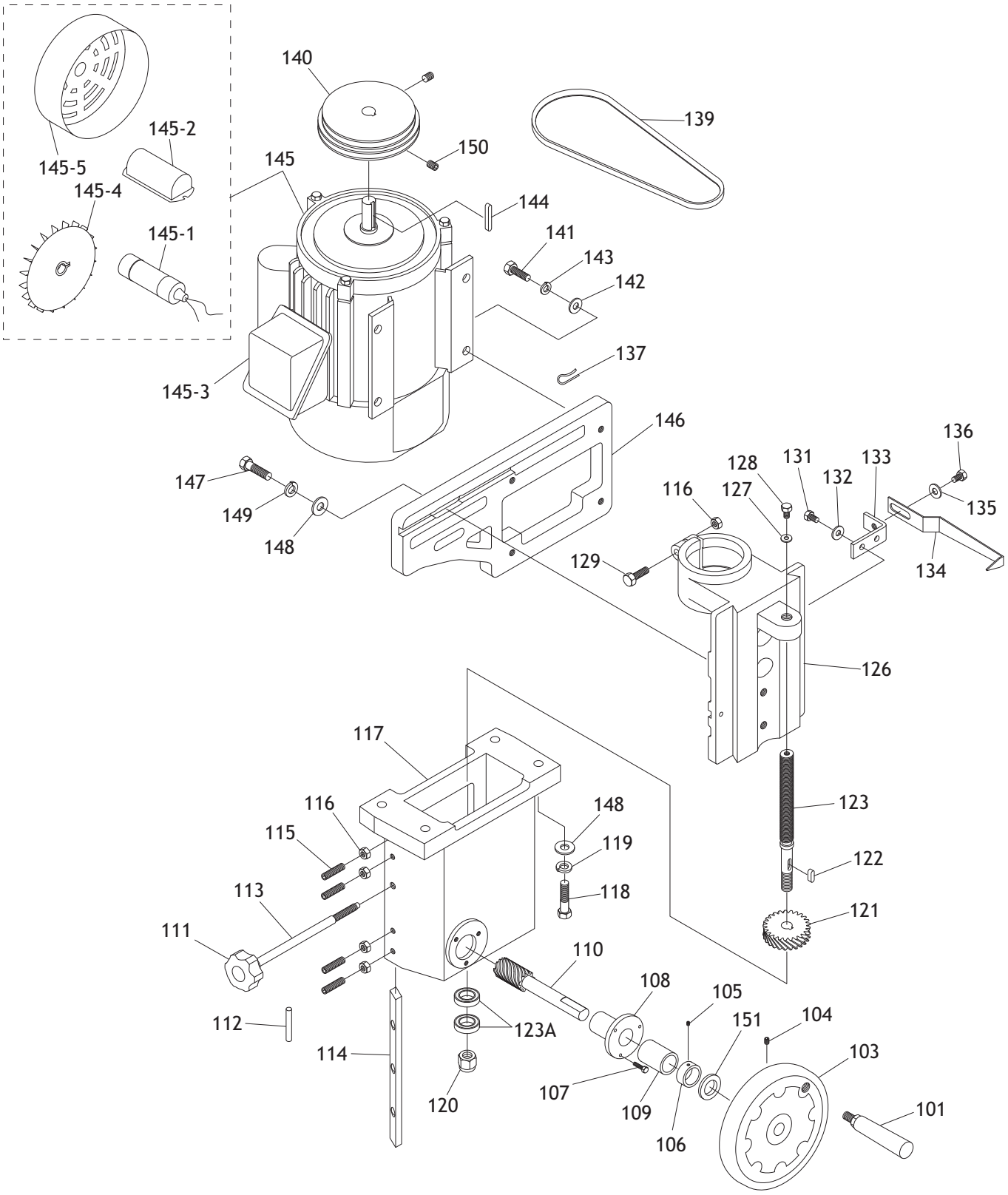
Main Parts List

REF	PART #	DESCRIPTION
1	X1674001	STAND
2V2	X1674002V2	MOTOR COVER V2.09.05
3	XPS06	PHLP HD SCR 10-24 X 3/8
4	XPB21	HEX BOLT 3/8-16 X 3/4
5	XPLW04	LOCK WASHER 3/8
6	XPW02	FLAT WASHER 3/8
7	X1674007	TABLE
8	X1674008	OUTER TABLE INSERT
9	X1674009	INNER TABLE INSERT
10	X1674010	BARREL SCREW 7/16-14 X 12
11	XPFH21	FLAT HD SCR 10-24X 3/4
12	X1674012	STARTING PIN
13	X1674013	LOCK HANDLE
14	XPW07	FLAT WASHER 5/16
15	X1674015	LEFT FENCE MOUNT
16	X1674016	HOLD-DOWN BAR BRACKET
16A	XPCAP04	CAP SCREW 1/4-20 X 1/2
16B	XPSS03	SET SCREW 1/4-20 X 3/8
17	X1674017	POINTER
17A	XPS07	PHLP SCREW 1/4-20 X 3/8
17B	XPW06	FLAT WASHER 1/4
18	XPCAP17	CAP SCREW 1/4-20 X 3/8
19	X1674019	MAIN FENCE BRACKET
19-1	X1674019-1	COMPLETE FENCE ASSEMBLY
20	X1674020	FENCE RAM SCALE
20A	X1674020A	LEFT FENCE HOUSING SCALE
20B	X1674020B	RIGHT FENCE HOUSING SCALE
21	X1674021	KNURLED KNOB
21A	X1674021A	ADJUSTMENT KNOB
22	X1674022	T-SLOT NUT 1/4-20
24	X1674024	FENCE SCREW 3/8-16 X 3-19/32
25	XPSS04	SET SCREW 1/4-20 X 5/16
26	X1674026	RIGHT FENCE MOUNT
28	XPW14	FLAT WASHER 5/8
29	X1674029	FENCE BOARD
30	XPS12	PHLP HD SCR 1/4-20 X 5/8
31	X1674031	SWITCH BOX

REF	PART #	DESCRIPTION
32V2	X1674032V2	LOCKING F/R SWITCH V2.09.10
33	X1674033	SWITCH BOX COVER
34	X1674034	SWITCH MOUNT BRACKET
35V2	X1674035V2	MOTOR CORD 14AWG 5C 86CM
36V2	X1674036V2	PWR CORD 14AWG 3C 366CM 6-15P
37	X1674037	STRAIN RELIEF 16
38	XPN07	HEX NUT 10-24
39	XPHTEK7	TAP SCREW #8 x 3/8
40	X1674040	SPINDLE HEIGHT SCALE
42	X1674042	GROMMET
44	X1674044	FENCE ADJUSTMENT BRACKET
45	XPTLW01	EXT TOOTH WASHER #10
46	X1674046	MACHINE ID LABEL
47	XLABEL-01	SAFETY GLASSES LABEL
48	XLABEL-02	UNPLUG MACHINE LABEL
49	XLABEL-04	ELECTRICITY LABEL
50	XLABEL-12	READ MANUAL LABEL
51	D3376	SHOP FOX NAMEPLATE
52	X1674052	FENCE RAM
53	X1674053	PINION SHAFT
55	XPCAP03	CAP SCREW 5/16-18 X 1
56	XPW07	FLAT WASHER 5/16
57	XPSS02	SET SCREW 5/16-18 X 3/8
58	XPW06	FLAT WASHER 1/4
59	X1674059	LOCK HANDLE
65	X1674065	STRAIN RELIEF PLATE
66	XPS01	PHLP HD SCR 10-24 X 1/2
67	XPN07	HEX NUT 10-24
68	X1674068	PINON SHAFT EXT RETAINING RING
69	X1674069	PADLOCK FOR SWITCH
70	X1674070	HOOK
71	X1674071	STRAIN RELIEF STD M20 STRAIGHT
72	X1674072	STRAIN RELIEF SNAP-IN M8
73	X1674073	STRAIN RELIEF STD M16 STRAIGHT
74	X1674074	REAR CABINET PANEL
75	XPFS03	FLANGE SCREW 10-24 X 3/8

Motor Assembly

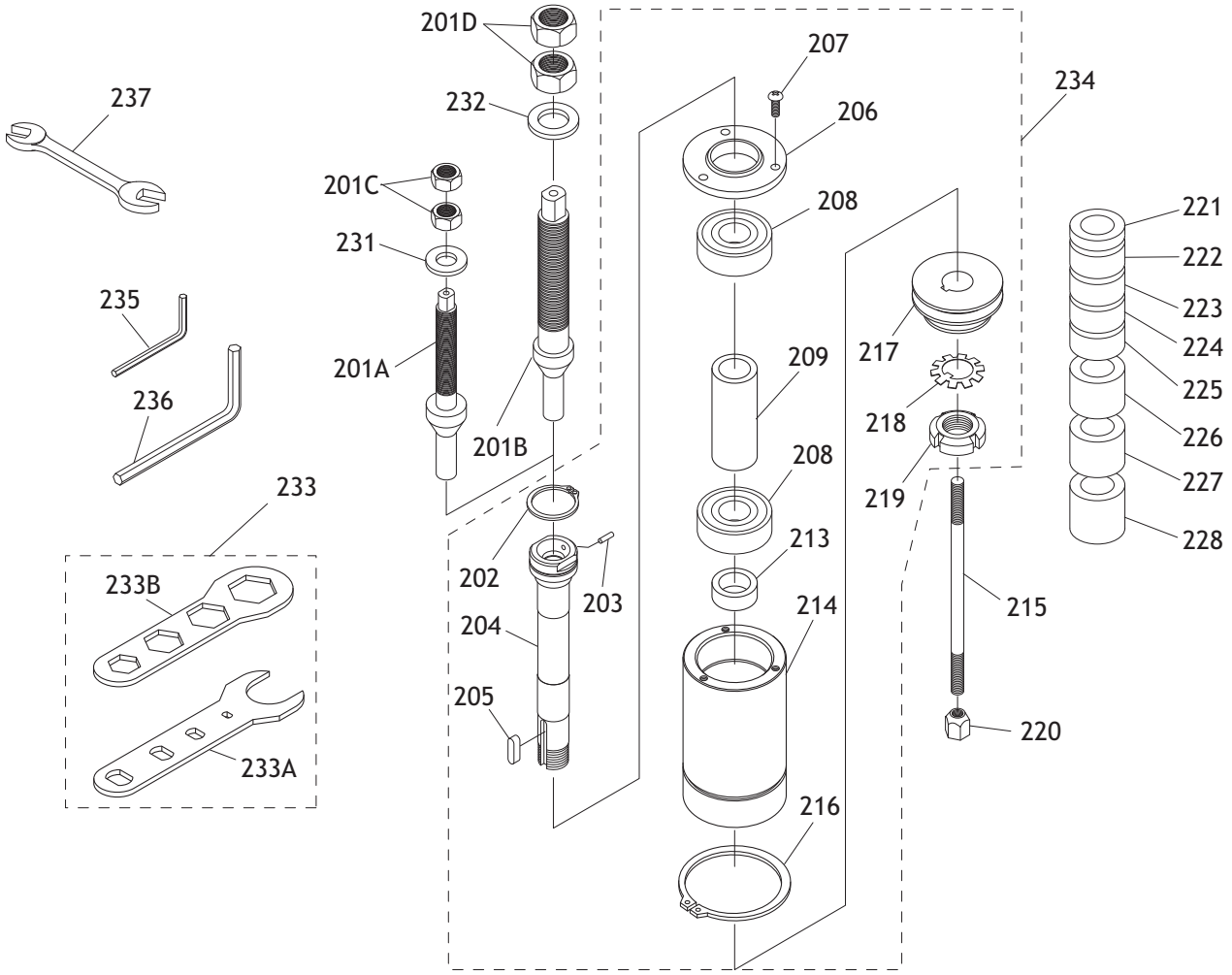


Motor Assembly Parts List

REF	PART #	DESCRIPTION
101	X1674101	HANDLE
103	X1674103	HANDWHEEL
104	XPSS02	SET SCREW 5/16-18 X 3/8
105	XPSS11	SET SCREW 1/4-20 X 1/4
106	X1674106	COLLAR
107	XPCAP04	CAP SCREW 1/4-20 X 1/2
108	X1674108	SHAFT MOUNT
109	X1674109	BUSHING
110	X1674110	WORM SHAFT
111	X1674111	STAR KNOB
112	XPRP72M	ROLL PIN 3 X 15
113	X1674113	SPINDLE LOCK SCREW
114	X1674114	GIB
115	XPSS20	SET SCREW 5/16-18 X 1-1/2
116	XPN02	HEX NUT 5/16-18
117	X1674117	ELEVATION HOUSING
118	XPB25	HEX BOLT 3/8-16 X 1-3/4
119	XPLW03	LOCK WASHER 3/16
120	X1674120	SPECIAL LOCK NUT
121	X1674121	GEAR 25T
122	XPK20M	KEY 5 X 5 X 15
123	X1674123	LEADSCREW 5/8-10 X 4-5/8
123A	XP51102	THRUST BEARING 51102
126	X1674126	SPINDLE HOUSING
127	XPW07	FLAT WASHER 5/16
128	XPB07	HEX BOLT 5/16-18 X 3/4

REF	PART #	DESCRIPTION
129	XPB11	HEX BOLT 5/16-18 X 1-1/2
131	XPB19	HEX BOLT 1/4-20 X 1/2
132	XPW06	FLAT WASHER 1/4
133	X1674133	BRACKET
134	X1674134	POINTER
135	XPW07	FLAT WASHER 5/16
136	XPB15	HEX BOLT 5/16-18 X 3/8
137	X1674137	CABLE CLAMP 1/2"
139	X1674139	V-BELT GATES 7M600
140	X1674140	STEP PULLEY
141	XPB12	HEX BOLT 5/16-18 X 1-1/4
142	XPW07	FLAT WASHER 5/16
143	XPLW01	LOCK WASHER 5/16
144	XPK12M	KEY 5 X 5 X 30
145	X1674145	MOTOR 2HP 110/220V 1PH 60HZ
145-1	XPC400A	S CAPACITOR 400MFD 125VAC
145-2	X1674145-2	CAPACITOR COVER
145-3	X1674145-3	WIRE BOX COVER
145-4	X1674145-4	MOTOR FAN
145-5	X1674145-5	MOTOR FAN COVER
146	X1674146	MOTOR MOUNT PLATE
147	XPB16	HEX BOLT 3/8-16 X 1-1/2
148	XPW02	FLAT WASHER 3/8
149	XPLW04	LOCK WASHER 3/8
150	XPSS02	SET SCREW 5/16-18 X 3/8
151	X1674151	HANDWHEEL WASHER

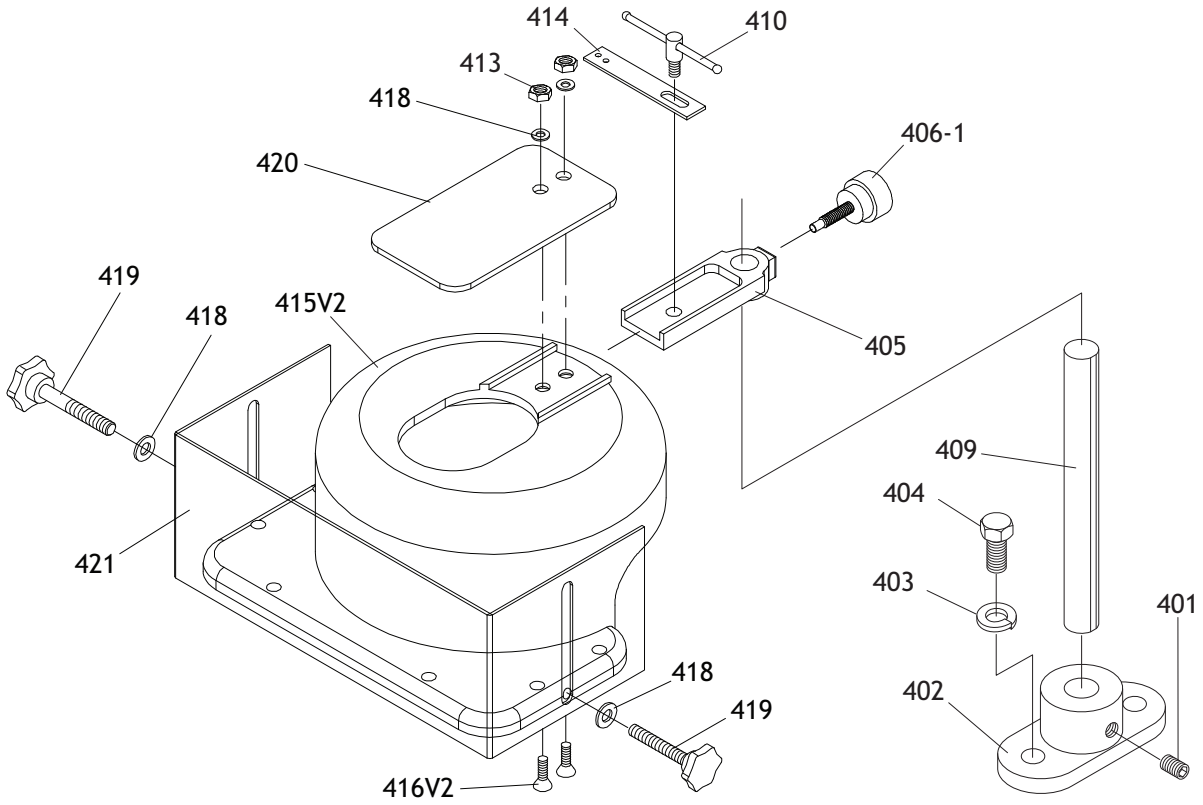
Spindle



REF	PART #	DESCRIPTION
201A	X1674201A	SPINDLE 1/2"
201B	X1674201B	SPINDLE 3/4"
201C	X1674201C	SPINDLE NUT SET 1/2"
201D	X1674201D	SPINDLE NUT SET 3/4"
202	XPR15M	EXT RETAINING RING 30MM
203	X1674203	CARTRIDGE PIN
204	X1674204	SPINDLE CARTRIDGE
205	XPK14M	KEY 5 X 5 X 18
206	X1674206	HOUSING CAP
207	XPFH08	FLAT HD SCR 10-24 X 1/2
208	XP6204	BALL BEARING 6204
209	X1674209	SPACER LONG
213	X1674213	SLEEVE
214	X1674214	BEARING HOUSING
215	X1674215	DRAWBAR 5/16-24 X 5-7/8
216	XPR13M	EXT RETAINING RING 65MM
217	X1674217	STEP PULLEY
218	X1674218	SPANNER LOCK WASHER 3/4"
219	X1674219	SPANNER NUT 3/4"

REF	PART #	DESCRIPTION
220	X1674220	DRAWBAR NUT 5/16-24
221	W1159	SPACER 1/2" x 1" x 1/4"
222	W1160	SPACER 1/2" x 1" x 3/8"
223	W1161	SPACER 1/2" x 1" x 1/2"
224	W1162	SPACER 1/2" x 1" x 3/4"
225	W1164	SPACER 3/4" x 1-1/4" x 1/4"
226	W1165	SPACER 3/4" x 1-1/4" x 3/8"
227	W1166	SPACER 3/4" x 1-1/4" x 1/2"
228	W1167	SPACER 3/4" x 1-1/4" x 3/4"
231	X1674231	SPINDLE WASHER 1/2"
232	X1674232	SPINDLE WASHER 3/4"
233	X1674233	SPINDLE WRENCH SET
233A	X1674233A	SPINDLE WRENCH
233B	X1674233B	SPINDLE WRENCH HEXAGON
234	X1674234	SPINDLE CARTRIDGE ASSEMBLY
235	XPAW03M	HEX WRENCH 3MM
236	XPAW05M	HEX WRENCH 5MM
237	XPWR1214	OPEN END WRENCH 12/14

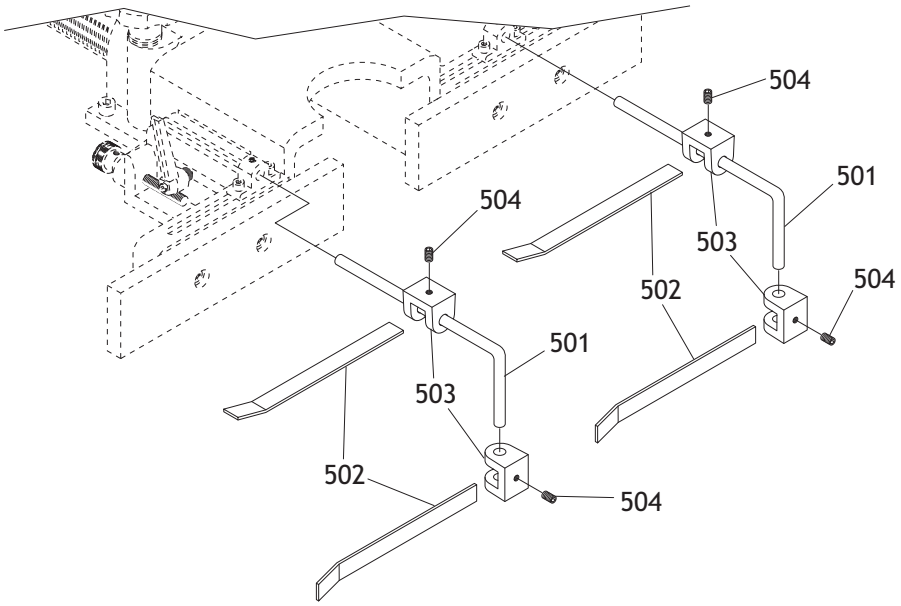
Safety Guard Assembly



REF	PART #	DESCRIPTION
401	XPSS02	SET SCREW 5/16-18 X 3/8
402	X1674402	SHAFT MOUNT
403	XPLW04	LOCK WASHER 3/8
404	XPB18	HEX BOLT 3/8-16 X 1
405	X1674405	EXTENSION BRACKET
406-1	X1674406-1	LOCK KNOB SHAFT ASSY
409	X1674409	SHAFT
410	X1674410	HANDLE PEG W/SHAFT

REF	PART #	DESCRIPTION
413	XPN05	HEX NUT 1/4-20
414	X1674414	EXTENSION BAR
415V2	X1674415V2	OVERHEAD SAFETY GUARD V2.09.10
416V2	XPFH02	FLAT HD SCR 10-24 X 1
418	XPW06	FLAT WASHER 1/4
419	X1674419	KNOB BOLT 1/4-20 X 1/2
420	X1674420	TOP SAFETY GUARD
421	X1674421	FRONT SAFETY GUARD

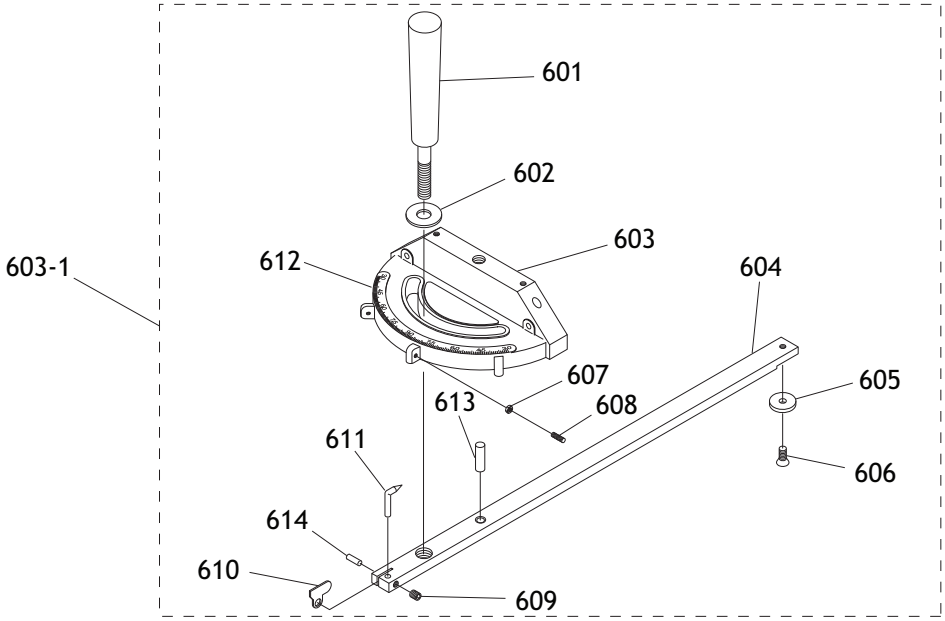
Hold-Downs



REF	PART #	DESCRIPTION
501	X1674501	HOLD-DOWN BAR
502	X1674502	HOLD-DOWN

REF	PART #	DESCRIPTION
503	X1674503	HOLD-DOWN BRACKET
504	XPSS03	SET SCREW 1/4-20 X 3/8

Miter Gauge



REF	PART #	DESCRIPTION
601	X1674601	HANDLE
602	XPW07	FLAT WASHER 5/16
603	X1674603	MITER GAUGE BODY
603-1	X1674603-1	COMPLETE MITER GAUGE ASSY
604	X1674604	MITER BAR
605	X1674605	SPECIAL WASHER
606	XPFH19	FLAT HD SCR 1/4-20 X 3/8
607	XPN07	HEX NUT 10-24

REF	PART #	DESCRIPTION
608	XPSS32	SET SCREW 10-24 X 3/4
609	XPSS29	SET SCREW 10-24 X 1/4
610	X1674610	STOP
611	X1674611	POINTER
612	X1674612	SCALE
613	X1674613	GUIDE STUD
614	X1674614	SPECIAL PIN 3MM

Warranty Registration

Name_____

Street _____

City _____ State_____ Zip_____

Phone #_____ Email_____ Invoice #_____

Model #_____ Serial #_____ Dealer Name_____ Purchase Date_____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

_____ Advertisement _____ Friend ____ Local Store
_____ Mail Order Catalog _____ Website ____ Other:

2. How long have you been a woodworker/metalworker?

_____ 0-2 Years _____ 2-8 Years ____ 8-20 Years _____ 20+ Years

3. How many of your machines or tools are Shop Fox?

_____ 0-2 _____ 3-5 ____ 6-9 _____ 10+

4. Do you think your machine represents a good value? _____ Yes ____ No

5. Would you recommend Shop Fox products to a friend? _____ Yes ____ No

6. What is your age group?

_____ 20-29 _____ 30-39 ____ 40-49
_____ 50-59 _____ 60-69 ____ 70+

7. What is your annual household income?

_____ $20,000-$29,000 _____ $30,000-$39,000 ____ $40,000-$49,000
_____ $50,000-$59,000 _____ $60,000-$69,000 ____ $70,000+

8. Which of the following magazines do you subscribe to?

____ Cabinet Maker
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Modeltec
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Practical Homeowner
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

9. Comments:_____

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CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE

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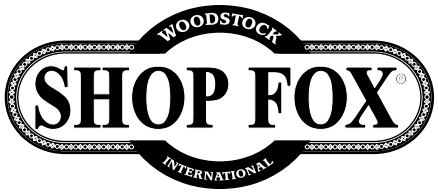

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FOLD ALONG DOTTED LINE

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY

Woodstock International, Inc. warrants all Shop Fox machinery to be free of defects from workmanship and materials for a period of two years from the date of original purchase by the original owner. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, lack of maintenance, or reimbursement of third party expenses incurred.

Woodstock International, Inc. will repair or replace, at its expense and at its option, the Shop Fox machine or machine part, which in normal use has proven to be defective, provided that the original owner returns the product prepaid to a Shop Fox factory service center with proof of their purchase of the product within two years, and provides Woodstock International, Inc. reasonable opportunity to verify the alleged defect through inspection. If it is determined there is no defect, or that the defect resulted from causes not within the scope of Woodstock International Inc.'s warranty, then the original owner must bear the cost of storing and returning the product.

This is Woodstock International, Inc.'s sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant that Shop Fox machinery complies with the provisions of any law or acts. In no event shall Woodstock International, Inc.'s liability under this warranty exceed the purchase price paid for the product, and any legal actions brought against Woodstock International, Inc. shall be tried in the State of Washington, County of Whatcom. We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of our products.

Every effort has been made to ensure that all Shop Fox machinery meets high quality and durability standards. We reserve the right to change specifications at any time because of our commitment to continuously improve the quality of our products.

High Quality Machines and Tools

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ACCU-SHARP®

ROMAN CARBIDE®

JOINTER PAL®

DURASTICK®

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STEELEX® FINE TOOLS

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